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IDENTIFIERS	Idaho; Montana; Mountain Plains Program; Nebraska; North Dakota; South Dakota; Wyoming

ABSTRACT

This first document in a three-volume summative evaluation report presents a portion of the internal evaluation conducted by the Mountain-Plains program, a residential, family-based education program developed to improve the economic potential and lifestyle of selected student families in a six-state region. (The three-volume report presents both an overview of the evaluation design and results and a component-by-component analysis as well.) This document contains an index of selected research reports which reference most of the major documents published by the Mountain-Plains project which are not already included in the three-volume summative evaluation report. The research studies contained in this document include an updated design for the internal evaluation; a discussion of the economic impact of the Mountain-Plains family education experience; an evaluation by employers of exited Mountain-Plains students; the final report on the user trial of Mountain-Plains curriculum; student evaluations of staff and curriculum; and summative internal evaluations of the family core curriculum and foundation education components. Two other documents comprise the summative evaluation report (CE 014 683 and CE 014 684) and present individual analyses of the remaining components of the Mountain-Plains program and various research studies. (BM)

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ED150397

SUMMATIVE EVALUATION

OF

MOUNTAIN-PLAINS

VOLUME I

11/76

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

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INTRODUCTION

The documents represent Mountain-Plains formal reporting to the National Institute of Education of summative internal evaluation of program effect. An economic impact assessment, including benefit/cost analysis, conducted by Professors Steven Seninger and Wayne Stevenson of the University of Utah, is also included. External effect analysis is being reported by Abt Associates, Inc., as well as a comparative description of "similar programs" and a quantification and description of rural disadvantaged on a national level.

Readers should be aware that the following documents represent only a portion of those reports relating to description or assessment of the program prepared by or for Mountain-Plains. The enclosed "Index of Selected Research Reports" references most major documents not included in the current compilation. Of particular interest may be the Mountain-Plains Handbook, plus supplemental volumes, which describe in detail the component by component structure and functioning of the program, and The Mountain-Plains Experience: Lessons From A Residential Career Education Center Serving Rural Disadvantaged Families document which reflects the implications of the Mountain-Plains experience for public policymakers, educators, and researchers, as seen by a panel of nationally recognized experts in the field.

The Summative Evaluation package itself presents both an overview of evaluation design and results as well as component by component analysis.

The Summary of Summative Evaluation briefly reprises the key elements of the overall evaluation design and summarizes the results discussed in greater detail in the individual component reports. It is supported by the Updated Design For Internal Evaluation of the Mountain-Plains Program which elaborates the research design for those unfamiliar with the extensive methodological statements embodied in Mountain-Plains funding proposals to the NIE.

The Economic Impact of the Mountain-Plains Family Education Experience study is not a comprehensive analysis of the economic impact of the program upon participants but rather assesses in detail the justifiability of society's investment in the Mountain-Plains Program and examines the questions of payback of social investment and benefit/cost configurations under several sets of assumptions.

The next four documents, Employer Evaluation of Exited Mountain-Plains Students, Final Report On User Trial Of Mountain-Plains Curriculum, Student Evaluation of Staff, and Student Evaluation of Curriculum are critical elements of the evaluation scheme representing assessments of the program, component by component, by key constituencies--employers, students, and other educators. The employer validation particularly is viewed as central to the questions of program evaluation.

The Curriculum document may additionally have implications for potential replicators.

The succeeding eight documents[1] focus on evaluation of the primarily cognitive components of the program including Family Core Curriculum, Foundation Education, and Occupational Preparation. Descriptive characteristics (Vol. I) and performance criteria (Vol. II) for each are presented.

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[1] Summative Internal Evaluation of Mountain-Plains Components, Vol. I, Chapters 1 through 6. Vol. II, and Reliability/Validity Analysis of Mountain-Plains Tests.

Additionally, the properties of Mountain-Plains developed cognitive assessment instruments are discussed.

The next series of reports deal with components primarily affective in nature. These include Early Childhood Education, Career Guidance, Counseling and Parent Involvement (the Community Development evaluation has been submitted separately since it reflects an assessment primarily of process rather than behavioral objectives). Each Summative Evaluation document summarizes the implications derived from previous reports in the component series, capsulizes methodology employed, and presents detailed discussion of evaluation results and program implications. Because it is believed to be of particular interest to readers of the summative evaluation reports, a detailed discussion of the psychological characteristics of entering students (Counseling Services Report No. 31) is also included. Additional examination of this subject is included in documents referenced in the Index of Research Reports.

It is hoped that this compilation represents a comprehensive and comprehensible distillation of the major evaluation outcomes of the Mountain-Plains Program. While many questions remain unanswered, much of value has been learned. We hope that educators, social-action programmers, and researchers will find our effort worthwhile and our experience useful to them in the problem areas with which they deal.

David A. Coyle
Director of Research

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PARENT INVOLVEMENT REPORT NO. 9
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PARENT INVOLVEMENT REPORT NO. 8
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The following listing represents a compilation, by year of publication and evaluation classification, of important Mountain-Plains research reports. Major design statements which were embodied in the funding Proposal documents submitted to NIE are not referenced here since the full body of annual funding Proposals are easily available at NIE and are not, per se, research reports. Each set contains, at a minimum, a discussion of accomplishments over the prior year, both operational and research plans for the coming year, and a proposed budget.

Additionally, early research/evaluation reports rendered obsolete by more current analyses or incorporated in subsequent comprehensive documents are not individually referenced.

It is hoped that this reference will prove of value to those individuals interested in the questions addressed, and, at least in part, answered during Mountain-Plains five-year experience. The reader is also referred to the Abt Associates, Inc., third-party external evaluation of the Mountain-Plains program, their review and comparison of "similar" programs and their analysis of the national nature and size of the rural disadvantaged population.

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1976

	Summative Internal Evaluation Package	General/Summary Descrip. Evaluation	Cognitive/Curriculum Evaluation	Affective Evaluation	Socio-Demographic Evaluation
Preliminary Analysis of Career Aptitudes, Interests, and Values from Data for Mountain-Plains Students - Career Guidance Report #8				X	
Exploratory "Work" Satisfaction in Occupational Training Areas - Career Guidance Report #9				X	
Canonical Correlation Analysis of the 16PF and OVIS for Disadvantaged Adults - Career Guidance Report #10				X	
Vocational Subgroups in a Disadvantaged Population - Career Guidance Report #11				X	
Subscale Dimensions of the Career Maturity Index Attitude Scale - Career Guidance Report #12				X	
Summative Analysis of Career Guidance; Summation of Previous Reports and Final Analysis - Career Guidance Report #13	X			X	
A Comparative Summary of Base Facility Usage by Mountain-Plains Students for 1975 and 1976 - Community Development Report #5		X			
Preliminary Analysis of Psychological Development of Mountain-Plains Students as Assessed by the POI - Counseling Services Report #25				X	
Factor Analysis of Student Inventory, Form 1-B and 2-B - Counseling Services Report #26				X	
Analysis of the Dimensions of Behavior Measured by the Student Inventory, Form B - Counseling Services Report #27				X	
POI Gains by Program Period and Their Utility in Assigning Effects to Components - Counseling Services Report #29				X	
Summative Internal Evaluation of Counseling Component: Part I, Summary of Reports 1973-1976 - Counseling Services Report #30	X			X	
Summative Internal Evaluation of Counseling Component: Part II, Psychological Characteristics of Entering Students as Assessed by the 16 Personality Factor Questionnaire and the Personal Orientation Inventory - Counseling Services Report #31	X			X	

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	Summative Internal Evaluation Package	General/Summary Descrip. Evaluation	Cognitive/Curriculum Evaluation	Affective Evaluation	Socio-Demographic Evaluation
Student Problem Inventory: Final Scales - Counseling Services Report #32				X	
Concurrent Validity of Student Inventory Scales - Counseling Services Report #33				X	
Summative Evaluation of Counseling: Program Effects and Developmental Influences - Counseling Services Report #34	X			X	
Basic Program and Accountability Design for the Infant Facilitation Program - Early Childhood Education Report #4		X			
Social, Self, and Psychomotor Development of Mountain-Plains ECE Children: A Preliminary Report - Early Childhood Education Report #5				X	
Summative Internal Evaluation of Early Childhood Education Component - Early Childhood Education Report #6	X			X	
Properties of Revised CROQ Scales - Parent Involvement Report #6				X	
Comparison of Mountain-Plains Staff and Students on the Child Raising Opinion Questionnaire (CROQ)				X	
Factoral Validity of the Child Raising Opinion Questionnaire - Parent Involvement Report #8	X			X	
Criterion Validity of the Child Raising Opinion Questionnaire - Parent Involvement Report #9	X			X	
Impact on Parenting Attitudes as Measured by the Child Raising Opinion Questionnaire - Parent Involvement Report #10	X			X	
Mountain-Plains Placement and a Comparison of Economic Conditions for the Six State Area		X			X
Mountain-Plains Placement Results on Students Exiting from June to October, 1975		X			X
Mountain-Plains Placement Results on Students Exiting from July through November 1975		X			X

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	Summative Internal Evaluation Package	General/Summary Descrip. Evaluation	Cognitive/Curriculum Evaluation	Affective Evaluation	Socio-Demographic Evaluation
Mountain-Plains Placement Report (August-December) and Summary Evaluation of State Office Staff		X			X
Mountain-Plains Placement Covering the Months of September through February - Placement Report #5		X			X
Mountain-Plains Placement Covering the Months of October through March - Placement Report #6		X			X
Employment by Occupational Training at Six Months Post-Program - Placement Report #7		X			X
Selected Pre-Center Characteristics for Student Families - Monthly (1973-1976)		X			X
Employer Evaluation of Curriculum			X	X	
A Comparison of Grade Level Scores on the Wide Range Achievement Test (WRAT) and the Comprehensive Test of Basic Skills (CTBS)			X		
Regression Analysis of Pre-Center Demographic Variables: Can Biographic Variables be Used to Predict Success at Mountain-Plains?		X			X
Regression Analysis of Pre & Post Center Incomes by State of Relocation: Can Pre-Center Income/Salary Predict Post-Center Income?		X			X
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Reliability/Validity Analysis of Mountain-Plains Tests	X		X		
Final Report on User Trial of Mountain-Plains Curriculum	X		X		
Summative Internal Evaluation of Mountain-Plains Components: Volume 1 - Descriptive Characteristics, Chapter 1 - Family Core Curriculum	X		X		

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	Summative Internal Evaluation Package	General/Summary Descrip. Evaluation	Cognitive/Curriculum Evaluation	Affective Evaluation	Socio-Demographic Evaluation
Summative Internal Evaluation of Mountain-Plains Components: Volume 1 - Descriptive Characteristics, Chapter II - Foundation Education	X		X		
Summative Internal Evaluation of Mountain-Plains Components: Volume 1 - Descriptive Characteristics, Chapter III - Office Education, Marketing and Tourism	X		X		
Summative Internal Evaluation of Mountain-Plains Components: Volume 1 - Descriptive Characteristics, Chapter IV - Building Trades	X		X		
Summative Internal Evaluation of Mountain-Plains Components: Volume 1 - Descriptive Characteristics, Chapter V - Mobility and Transportation	X		X		
Summative Internal Evaluation of Mountain-Plains Components: Volume 1 - Descriptive Characteristics, Chapter VI - Summary	X		X		
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Mountain-Plains Handbook: The Design and Operation of a Residential Family-Oriented Career Education Model - With Supplemental Detail Volumes		X			
The Mountain-Plains Experience: Lessons From a Residential Career Education Center Serving Rural Disadvantaged Families		X	X	X	X
Summary of Summative Evaluation of the Mountain-Plains Program	X		X	X	X
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	Summative Internal Evaluation Package	General/Summary Descrip. Evaluation	Cognitive/Curriculum Evaluation	Affective Evaluation	Socio-Demographic Evaluation
Comparisons of Student and Supervisor Evaluation of Instructors; Concurrent Validity Study - Confidential Report		X			
Student Evaluation of Counselors - Confidential Report		X			
Student Evaluation of Career Guidance Specialists - Confidential Report		X			
1975					
Basic Internal Accountability Design for Career Guidance - Career Guidance Report #1		X		X	
Impact of Role Playing on "Rebellious" and "Cooperative" Adults with Disadvantaged Adults: A Preliminary Report - Career Guidance Report #2				X	
Preliminary Report on "Work" Satisfaction in Occupational Training Areas - Career Guidance Report #3				X	
Preliminary Analysis of Interests and Aptitudes in a Disadvantaged Adult Population with Implications for Program Design - Career Guidance Report #4				X	
Career Maturity Development of Disadvantaged Adults Within the Mountain-Plains Program - Career Guidance Report #5				X	
Impact of "World of Work" Program on "Normal" Disadvantaged Students: A Preliminary Report - Career Guidance Report #7				X	
Basic Internal Accountability Design for Community Development Component - Community Development Report #1		X			
Program Development and Rationale - Community Development Report #2		X			
Survey of Student Recreational Interests - Community Development Report #3		X			
Effects of Applying Rational Behavioral Training in a Group Counseling Situation with Disadvantaged Adults - Counseling Services Report #22				X	

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	Summative Internal Evaluation Package	General/Summary Descrip. Evaluation	Cognitive/Curriculum Evaluation	Affective Evaluation	Socio-Demographic Evaluation
Counselor Characteristics and Effectiveness Criteria: An Analysis of One Staff - Counseling Services Report #23				X	
Effects of Short Term Temperature Trainer Biofeedback on High Tension Disadvantaged Adults - Counseling Services Report #24				X	
Preliminary Assessment of Cognitive Development of Children in Early Childhood Education - Early Childhood Education Report #3			X		
Student Evaluation of Orientation Schedule - EDP Report #2		X			
A Reliability Assessment of the "Student Evaluation of Learning Materials" Form A - EDP Report #3			X		
Student Evaluation of Learning Materials by Curriculum Area - EDP Report #4			X		
A Reliability Assessment of "Student Evaluation of Staff" Form A - Instructors - EDP Report #5		X			
Student Evaluation of Instructional Staff by Curriculum Area - EDP Report #6		X			
Student Evaluation of Instructional Staff - EDP Report #7		X			
A Reliability Assessment of "Student Evaluation of Staff" Form B - Counselors - EDP Report #8		X			
Student Evaluation of Counselors - EDP Report #9		X			
A Reliability Assessment of "Student Evaluation of Staff" Form C - Career Guidance Specialists - EDP Report #10		X			
Student Evaluation of Career Guidance Specialists - EDP Report #11		X			
A Reliability Assessment of "Student Evaluation of Staff Form D - State Coordinators" - EDP Report #12		X			
A Reliability Assessment of the "Child Raising Opinion Questionnaire" Form E1 - EDP Report #14				X	

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	Summative Internal Evaluation Package	General/Summary Descrip. Evaluation	Cognitive/Curriculum Evaluation	Affective Evaluation	Socio-Demographic Evaluation
A Reliability Assessment of the "Participant Inventory" - EDP Report #15				X	
Employer Evaluation of Completing Mountain-Plains Students (1/1/74 - 12/31/74) - EDP Report #16		X	X	X	
Student Perception of Family Core Curriculum Areas - EDP Report #17			X	X	
Adjustment to Parenthood Among a Select Group of Disadvantaged Parents - Parent Involvement Report #2				X	
Revision of the Child Raising Opinion Questionnaire - Parent Involvement Report #3				X	
Parent Involvement Class: Preliminary Analysis of Attitudinal Impact - Parent Involvement Report #4				X	
Impact of Parent Involvement Class on Two Parenting Attitudes - Parent Involvement Report #5				X	
In-Depth Case Study of Exited Families - Research Design		X		X	X
Work and Income: A Follow-Up Study of Former Students of Career Education Model IV - Case Study Report #1		X		X	X
Jim and Nan Schmidt - Case Study Report #2				X	X
Michael and Marie Borkontic - Case Study Report #3				X	X
Toby and Margie Ginn - Case Study Report #4				X	X
Ray and Nancy Barton - Case Study Report #5				X	X
Betty Beuler - Case Study Report #6				X	X
Ron and Dolly Bloom - Case Study Report #7				X	X
Lisa Williams - Case Study Report #8				X	X
Henry and Wilma Walking Woman - Case Study Report #9				X	X
Ernie and Ilene Torres - Case Study Report #10				X	X
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	Summative Internal Evaluation Package	General/Summary Descrip. Evaluation	Cognitive/Curriculum Evaluation	Affective Evaluation	Socio-Demographic Evaluation
Bob and Jane Hockum - Case Study Report #12				X	X
John and Karen Teap - Case Study Report #13				X	X
Randall and Darlene Hall - Case Study Report #14				X	X
Leon and Polly Grey Feather - Case Study Report #15				X	X
Marydel Green - Case Study Report #16				X	X
Franklin and Andrea White Deer - Case Study Report #17				X	X
Jim and Ann Jones - Case Study Report #18				X	X
Dennis and Hazel Jensen - Case Study Report #19				X	X
Alvin and Edith Oster - Case Study Report #20				X	X
Harry and Bobbie (Morgan) Feneman - Case Study Report #21				X	X
Robert and Sally Hobart - Case Study Report #22				X	X
Charles White - Case Study Report #23				X	X
James and Anita Randle - Case Study Report #24				X	X
Social and Self Development: A Follow-Up Study of Career Education Model IV Students - Case Study Report #25		X		X	X
Follow Up Examination of Completing Student Failures Based on 16PF and POI Scores: A Preliminary Report				X	
Data Monitor Office Procedures for Maintaining Quality Student Data		X			
Indian Education: Application and Limitations of the Mountain-Plains Family Career Education Model - A Task Force Report		X		X	
User Trial of Mountain-Plains Curriculum - Progress Report			X		
Summary of Office Education Occupational Area Placement		X			X
Summary of Mobility and Transportation Occupational Area Placement		X			X

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	Summative Internal Evaluation Package	General/Summary Descrip. Evaluation	Cognitive/Curriculum Evaluation	Affective Evaluation	Socio-Demographic Evaluation
Orientation Guide for User Trial of Mountain-Plains Curriculum		X			
Summary of Building Trades Occupational Area Placement - Electrical Occupational Area; Summary of Radio & TV			X		X
Design for Market Assessment and Dissemination of MP Products		X			
Design for Field Testing of Mountain-Plains Curriculum			X		
Instructor Data Reporting Procedures		X			
The Effect of the Curriculum Calendar in Self-Paced Individualized Instruction		X	X		
Recommendation and Rationale Concerning the Proposed Study of the Effect of Placement and Follow-Up Support Services on Exited Mountain-Plains Students		X			X
A Curriculum Oriented Description of the Instructional System of MP		X			
Psychological Characteristics of Program Non-Completers				X	
1974					
Personality Development and Employability in a Rural Disadvantaged Population - Counseling Services Report #11				X	
Counseling Program Development and Rationale - Counseling Services Report #12		X		X	
Frequency Distribution of Responses to Student Inventory, Form A (Data Summary Only) - Counseling Services Report #13				X	
Survey of Group Counseling Exercises and Techniques in Use: Part II - Counseling Services Report #14		X			
Impact of Group Counseling on Self and Other Acceptance and Persistence with Rural Disadvantaged Student Families - Counseling Services Report #15				X	

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	Summative Internal Evaluation Package	General/Summary Descriptive Evaluation	Cognitive/Curriculum Evaluation	Affective Evaluation	Socio-Demographic Evaluation
Counseling Objectives and Measurement Criteria - Counseling Services Report #16 (Supplement to CS #4)		X		X	
Canonical Correlation Analysis of POI and 16PF Scales for a Rural Disadvantaged Population - Counseling Services Report #17				X	
Factor Analysis of POI Scale Scores with an Adult Rural Disadvantaged Population - Counseling Services Report #18				X	
Factor Analysis of 16PF, Form E Scale Scores of Adult Rural Disadvantaged Students (Data Summary Only) - Counseling Services Report #19				X	
Effects of a Group Counseling Model on Self-Concept and Related Variables with Adult Mmebers of Disadvantaged Families - Counseling Services Report #20				X	
A Personality Development Interpretation of Employability and Disadvantaged Status with Remedial Implications - Counseling Services Report #21				X	
Internal Accountability Design for Early Childhood Education - Early Childhood Education Report #1		X	X		
Program Description and Rationale - Early Childhood Education Report #2		X	X		
Student Evaluation of Instructional Staff - EDP Report #1		X			
Development of an Instrument for the Assessment of Parenting Attitudes - Parent Involvement Report #1				X	
Preliminary Design for Reliability and Validity Testing of Assessment Instruments - Phase II			X		
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	Summative Internal Evaluation Package	General/Summary Descrip. Evaluation	Cognitive/Curriculum Evaluation	Affective Evaluation	Socio-Demographic Evaluation
Participant Perceptions of Initial Program Contacts - Report from Reception Feedback Form (January 8-March 22, 1973) Part I - General Circulation; Part II - Confidential - Counseling Services Report #1		X		X	
Problems and Potential of the SMI Package for the Mountain-Plains Program: Analysis of a Program Failure - Counseling Services Report #2				X	
Orientation Evaluation - Part I - Counseling Services Report #3		X			
Counseling Objectives and Measurement Criteria: An Operational Beginning - Counseling Services Report #4		X		X	
Survey of Group Counseling Exercises and Techniques in Use: MPEEDP Counseling Program - Counseling Services Report #5		X			
Program and Plans: Community Development and Social Services - Counseling Services Report #6		X			
Analysis of Participant Inventory - Counseling Services Report #7				X	
Problems Encountered and Program Revision: Counseling - Counseling Services Report #8		X			
Departmental Programs, Plans, Achievements, and Projections - Counseling Services Report #9		X			
Counseling Program Development and Rationale - Counseling Services Report #10		X			
Formative Evaluation Status Report		X	X	X	X
Evaluation and Comparison of Student Selection Criteria		X			

A REGIONAL PROGRAM IN
COMPREHENSIVE FAMILY EDUCATION

SUMMARY OF SUMMATIVE EVALUATION

MOUNTAIN-PLAINS EDUCATION AND ECONOMIC DEVELOPMENT PROGRAM, INC.

BOX 3078 GLASGOW AFB, MONTANA 59231

MOUNTAIN-PLAINS EDUCATION ECONOMIC DEVELOPMENT PROGRAM INC.

SUMMARY OF SUMMATIVE EVALUATION

MOUNTAIN-PLAINS EDUCATION AND ECONOMIC DEVELOPMENT PROGRAM, INC.

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October, 1976

This Study is a Product of the
Research Services Division

David A. Coyle
Director

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INTRODUCTION

Implicit in all proposed activities defined in Mountain-Plains Proposal: FY76 R & D Completion; Volume I Program (1975) is an evaluation in its entirety. The purpose of this report is to provide a summative overview of research findings pertaining to all aspects of the Mountain-Plains Program. Although all evaluations are based on evidence collected during one year of program stabilization, an attempt has been made to maintain a historical perspective and to relate present findings to the various developmental phases of the program.

Within the context of overall program evaluation, there are four general areas requiring detailed attention. These are the cognitive (occupational preparation and basic skill support), affective (counseling, career guidance, community development, etc.), sociodemographic, and cost effectiveness paradigms. Of primary importance, however, is the interactivity of events within and across paradigms. This acknowledgment of interactivity is the core of comprehensive evaluation. Recognition of the complexity of not only the individual within the program but of the complexity of the program and its goals made the need for an interdisciplinary approach quite clear.

The original mission of the Mountain-Plains Program was to "conceive, develop, and implement a multi-purpose educational and training program to serve primarily the members of the rural population of the six-state region who can be benefited from such residential and non-residential experiences with respect to improving their employability."[1] This mission was subsequently altered to include documentation and feasibility/replication research when

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[1] Department of Health, Education, and Welfare, Office of Education Notification of Grant Award OEG-0-71-3128, May, 1971.

Mountain-Plains became the National Career Education Model IV.[2] These global mission statements were ultimately translated into program and participant objectives. The objectives, expressed in varying degrees of specificity, allowed program evaluators to begin their task with a clear understanding of the objects of their evaluation. The present report therefore documents not only the development and implementation of a career education system but also the quality of its design, the degree to which the design was adhered to, and the results of implementation of that design.

PROGRAM AND EVALUATION DESIGN

A major identifying characteristic of the Mountain-Plains Program has been an individualized approach to career development. This concept applies not only to vocational training but to personal, family, and social development as well. Participants may thus enter the program at any time, progress at their own best rate, and exit when optimally prepared to meet the demands of industry and society. Mountain-Plains' commitment to this philosophy of comprehensive remediation has resulted in a program design of multiple, specific objectives. All objectives are stated in such a way that both the participant and the evaluator (whether an instructor, counselor, career guidance specialist, or program evaluator) would know whether or not the objective has been mastered.

In addition to influencing design decisions, program mission and philosophy also dictated certain population parameters. A major characteristic of Mountain-Plains students is the fact that they are "rural multi-problem families chosen from a Western six-state region."[3] In addition, other population characteristics have been documented. Bunch (1975) has summarized 21 sociodemographic characteristics of the 361 adults (204 families) participating in the program during the year of stabilization. Typical heads-of-household are approximately 26 years old and have completed eleven years of public school. Numerical and verbal achievement scores indicate a decline in mathematical facility but a moderate gain in verbal achievement. Spouses demonstrate a similar pattern of educational attainment and are about two years younger than heads-of-household.

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[2] Career Education Model IV, Proposal for Grant Continuance: Volume II Research Design, April 15, 1973, p. 1.

[3] ibid.

Economic characteristics of program participants reveal a pattern of unemployment/underemployment and reduced participation in the economic system. Most families have experienced unemployment during the year prior to program entry. Median family is approximately $3,500 per year; only about 10% made over $6,000. Approximately 70% fall below federal poverty level guidelines. Although the primary source of income for all families is wages, other sources such as welfare, AFDC, unemployment, and indirect incomes (government housing and food purchasing subsidies) are also reported by some students. Aid to Families with Dependent Children (AFDC) is a primary source of income for single heads-of-household, who constitute roughly one-fourth of all families. Unemployment benefits averaged about $125 per family but were as high as $3,000 for one family.

Approximately 20% of all families are of minority status, a proportion higher than that for the region as a whole. Of these, nearly 75% are American Indian. Chicanos comprise most of the balance.

Various measures of life quality are further indicators of reduced participation in the socioeconomic system. Roughly one-fourth (27.1%) neither own their own home nor rent but rather live with friends or relatives; 64% rent, and 8.4% report home ownership (home ownership is defined as any degree of ownership from first mortgage payment to outright possession). Personal indebtedness (excluding monthly housing and utility payments) averages just over $700. For a more detailed description of the Mountain-Plains student population, the reader is directed to Myers, Coyle, and Clark (1975), Myers and Honrud (1974), Conrad (1974), Conrad and McMahon (1975), and Conrad and Bunch (1976).

The number of families actually experiencing the Mountain-Plains Program since its inception totals approximately 1,200. The average length of stay is currently eight months, which means that approximately 300 families per year are given developmental assistance at a cost of approximately $12,500 per family.[4]

For every five families admitted to the program, there is one family randomly assigned to a control group for comparison purposes (those admitted are therefore referred to as the experimental group in all references to the two groups). Comparability of these two groups in major relevant respects has been demonstrated. Extensive comparisons of the two groups appear in Mountain-Plains Proposal: FY76 R & D Completion; Volume I (1975). The purpose of assigning families was to allow for a pretest/post test control group experimental design (Campbell and Stanley, 1966). Families are therefore assigned on a random basis. A number of methodological, ethical, and political problems resulted from this procedure and are dealt with in greater detail in subsequent sections of this report.

Aside from the problems involved in group assignment (control or experimental), there are the problems inherent in deciding who should be considered for program participation in either group. By estimate, there are approximately 160,000 qualifying families in the six-state area served by Mountain-Plains. A logical approach, and the one used by most non-public institutions (i.e., all institutions for which attendance is not made mandatory by state or federal legislation), would be to develop multiple regression or discriminant functions designed to select those most likely to succeed. Not only has this approach not been pursued by Mountain-Plains, it has been flatly rejected.[5]

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[4] For a detailed accounting of this expenditure, the interested reader is directed T. R. Flores, "From the Exec's Office," National Model IV Newsletter, 1975, 2 (5), p. 5.

Certain selection criteria, however, are applied. Participation is limited to families (one or more parents and one or more children) residing in the six-state area. Prospective student families must also demonstrate a history of unemployment or underemployment, possess only limited marketable skills, be able to read at a fifth grade level and compute at a fourth grade level, and be willing to relocate to Glasgow Air Force Base. There have also been income and debt ceilings, although the debt limitation has now been removed.

By virtue of its designation as National Career Education Model IV, Mountain-Plains is exemplary in nature. It does not exist as, nor may it be evaluated as, an isolated entity. The traditional criteria of evaluation are superceded by a somewhat more stringent set. In addition to assessing whether or not the program is functional, it is also necessary to ascertain the replicability of the model. This implies that all program components must be evaluated not only in terms of output but also in terms of specificity and non-dependence on individual staff strengths (although those strengths are expected to be reflected in the final, exportable products).

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[5] J. P. Williams, "Student Recruiting a Complex Process," National Model IV Newsletter, 1975, 2 (6), p. 2.

Evaluation of the program, its contents, its products, and prospects for dissemination or replication, is therefore an assessment of mastery of various specific objectives. For each objective there is a well defined criterion. Assessment then becomes a fairly simple matter of determining the degree of discrepancy between an observed outcome and a predetermined criterion. A formal discrepancy model adapted from Provus (1971) was adopted.

The discrepancy evaluation design exists in five overlapping phases: design, implementation, formative, summative, and cost benefit. The objectivity and specificity referred to previously are most appropriate to implementation and formative evaluations, and to a lesser extent in design, summative evaluation, and cost-benefit evaluation.

Design evaluation has involved the services of many third party contractors. Evaluation of affective program component design has been conducted by Dr. E. L. Herr.[6] Cognitive program components have been evaluated by Dr. S. M. Zifferblatt.[7] The design of the program in its entirety has been favorably compared to other career education programs by the ARIES Corporation.[8] A unifying characteristic of the three reports was that all were favorable. Other external evaluations of the program are being conducted by Abt Associates of Cambridge, Massachusetts. A recent topical overall program examination is provided through a document compiled and edited by Northwest Education Laboratory.[9]

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[6] E. L. Herr, R. Conrad, R. Manley, and R. Seeley, "Counseling and Career Guidance with Rural Disadvantaged Families in a Residential Setting."

[7] S. M. Zifferblatt, R. England, and D. A. Coyle, "Curriculum Design for Social Change."

[8] ARIES Corporation, "Survey Report on Rehabilitative-Type Programs, in the Mountain-Plains States," 1974.

[9] Leo Myers, (ed.) "The Mountain-Plains Experience: Lessons From A Residential Career Education Center Serving Rural Disadvantaged Families," 1976.

The replicability aspect of curriculum design has been assessed through the User Trial of Mountain-Plains Curriculum. Various sites in Arizona, California, Montana, and Oregon were selected to participate. Virtually every curriculum area was represented, and an evaluation strategy was developed around key replicability questions.[10]

Evaluation of implementation was an assessment of the extent to which day-to-day program activities were consistent with program design. This assessment was conducted internally primarily by the Data Monitor's Office but also by the Curriculum Department and Tests & Measurement Department.

Formative evaluation was conducted throughout the research and development stages of the program. The object of this phase of evaluation was to pinpoint problem areas and develop solutions. All activities subsequent to December 1, 1974 were the focus of summative evaluation, the object of which was to measure the impact of various program components under well developed, stabilized conditions.

Cost-benefit analysis focuses on the actual dollar costs of putting a family through the Mountain-Plains Program and the ultimate return on those dollars to society. A number of factors are taken into account, including salary increments, employment stability, and reliance on government subsidies. A study of these and other variables was performed through a contract with Drs. Seninger and Blair of the University of Utah. A final economic impact analysis is currently in progress by Drs. Seninger and Stevenson, but will only be partially completed at the time of publication of this report.

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[10] See R. G. England and M. B. Bunch, "User Trial of Mountain-Plains Curriculum." Mountain-Plains Press, 1975; England and Bunch, "Final Report on User Trial of Mountain-Plains Curriculum." Mountain-Plains Press, 1976.

The discrepancy evaluation model has proven to be a highly efficient data management system. Under this model, virtually all relevant facts have been assembled over the entire life of the program. The various avenues of exploration, feedback, and input have enabled program administrators to react quickly to existing problems and to plan ahead to avoid future pitfalls. The reader interested in further exploration of the discrepancy model is directed to Provus (1971) and Steinmetz (1976 in press).

Summative and cost-benefit evaluations have focused on five overriding questions:

1. Is the program internally successful?
2. For whom is the program successful?
3. Which program components are internally successful?
4. What are the benefit/cost and ancillary economic impact configurations of the program?
5. Is the program replicable?

These general questions have, of course, been delineated into more specific research questions and translated into the evaluation design outlined previously. Success has been variously defined in terms of component completion rate, program completion rate, psychological adjustment, career selection, community involvement, test performance, student evaluation, and employer satisfaction, depending on the objectives being assessed. For complete descriptions of program component criteria, see Bunch (1975-76), Conrad (1973a, b), Manley and Conrad (1974), Shank, Conrad, and Jenkins (1975), and Weber and Conrad (1974).

The period of stabilization for purposes of internal summative testing, referred previously, covered families entering the program from December 1, 1974 to July 31, 1975. This period, eight months, is the approximate length of time required for a typical family to complete the program. During the stabilization period, 204 families (361 adults) entered the program (the period actually extended beyond July, 1975 to the exit date of the last family in the stabilization population). This number was approximately equal to the number of families one might find on center on any given day. During the period of stabilization, no major programmatic changes took place. Summative evaluations involved basically just the 204 families entering the program under these conditions.

Program evaluative data from these families came in many forms. Psychological test scores, cognitive test scores, various measures of satisfaction, completion rate, and a host of other variables were considered. A representative list of assessment instruments is included in Table 1.

Table 1

Assessment and Data Reporting Instrumentation

Assessment Instrument	Elements	User
Comprehensive Course pre/post cognitive tests.	Related to curriculum/terminal objectives. Is prescriptive.	All areas with cognitive curriculum. Family Core Curriculum, Foundation Education, Occupational Preparation, Career Guidance.
Unit pre/post cognitive tests.	Related to curriculum/unit objectives.	As Above.
Course/Unit performance tests.	Criterion-referenced competency test/related to objectives.	Occupational preparation areas. Career Guidance to a minor degree.
California Test of Basic Skills.	Communications/math skills.	Foundation Education.
Ohio Vocational Interest Survey (OVIS).	Vocational interest.	Career Guidance.
General Aptitude Test Battery (GATB).	Vocational aptitude.	Career Guidance.
Minnesota Importance Questionnaire (MIQ - Gay)	Vocational values interpretation.	Career Guidance.

Table 1 (Continued)

Assessment Instrument	Elements	User
Career Maturity Index (CMI - Crites)	Work attitudes	Career Guidance.
Job Descriptive Index (JDI - Smith, et.al.)	Employment satisfaction.	Career Guidance.
Minnesota Satisfactoriness Scale (MSS - Gibson, et.al.)	Employment satisfactoriness.	Career Guidance, Counseling.
Responsibility Index (RI - Elsass & Sweney).	Rebel, cooperator ingratiator roles in work situation.	Career Guidance.
Child Behavior Rating Scale (Cassell).	a. Social development. b. Self-concept development.	Early Childhood.
Peabody Picture Vocabulary Test (Dunn).	Cognitive development (symbols and objects).	Early Childhood.
Purdue Perceptual Motor Survey - modified by Mountain-Plains.	Perceptual/motor skill development.	Early Childhood.
Child Raising Opinion Questionnaire (Mountain-Plains - in valication testing).	Parental attitudes - indulgence/authoritarianism.	Parent Involvement.
Personal Orientation Inventory (POI - Shostrom).	Personal identity and intimacy factors.	Counseling.
16 Personality Factor Scale (16PF - Cattell).	Self-assurance, relaxation, ego strength.	Counseling.
Student Evaluation of Staff (Mountain-Plains - reliability only established to date).	Student perception of "likeability/admirability" of staff competence.	Occupational Preparation, Family Core Curriculum, Counseling, Foundation Education, Career Guidance.
Student Evaluation of Curriculum.	Student perception of desirability, clarity, relevance and efficacy of Mountain-Plains curriculum and individualized approach.	Occupational Preparation, Family Core Curriculum.

Table 1 (Continued)

Assessment Instrument	Elements	User
Employer Evaluation of Exited Students.	Occupational competencies and work attitude.	Research.
Intake Interview Packet.	Socio-demographic characteristics of students.	Research.

As stated previously, evaluation of each program component consisted of comparing results to predetermined criteria and noting the discrepancy. In most instances, the procedures by which results were obtained and comparisons made were less simplistic than the evaluation questions might suggest. For example, in response to the question, "Which program components are internally successful?," analysis of variance (ANOVA) procedures were used. Although thorough methodological discussions are included in Mountain-Plains Proposal: FY76 R & D Completion Volume I - Program and amplified in related subsequent sources (Bunch, 1975, 1976; Bunch, Conrad, Lewis, and Manley, 1976; Conrad, 1976; England and Bunch, 1975), a brief overview of certain formal procedures used and problems encountered is given here.

Subgroup analysis was used in several separate evaluations of the Career Guidance component. Scale scores from the General Aptitude Test Battery (GATB), Ohio Vocational Interest Survey (OVIS), and Minnesota Importance Questionnaire (MIQ) were factor analyzed, and resultant factor scores were used as the basis of a profile similarity grouping procedure utilizing a generalized distance measure. The procedure enabled investigators to compare program and occupational area completion by subgroup, determine career choice appropriateness, and to analyze subgroup differences on occupational characteristics. The interested reader is directed to Bunch, Conrad, Lewis, and Manley (1976) for a more detailed description of this procedure.

Correlational and ANOVA procedures were utilized in User Trial. One important question was whether or not there was a relationship between instructor compliance with Mountain-Plains instructional procedures and subsequent performance. Biserial correlation coefficients were computed with instructor compliance/noncompliance (treated as an artificial dichotomy) and percentage of students mastering curriculum objectives as the variables of interest. ANOVA procedures were used in comparisons of sites on a number of variables in response to the question, "Does the curriculum work better at Mountain-Plains or User Trial Sites?"

As stated, ANOVA was also utilized in response to the question, "Which program components are internally successful?" Each occupational area was compared to other occupational areas in terms of completion, costs, student evaluations of staff, and evaluations of curriculum. In instances where overall differences were detected, Newman-Keuls post hoc procedures were applied to determine specific pairwise differences.

Factor analysis was used to reduce the data base on most counseling tests. Those instruments not already factor analyzed by publishers were analyzed by Mountain-Plains staff, generally employing principal components extraction with varimax rotation. Following factor analysis, gains on various factors were computed for each student (program entry scores vs. exit scores for stabilization students). Both raw and residualized gains were noted. These gain scores served as the primary source of evaluative data for the Counseling component of the program.

Reliability and validity of curriculum tests were generally determined in a nonparametric fashion. Each item was assessed in terms of its ability to discriminate between masters and non-masters. For reliability analysis, mastery was defined in terms of scoring above or below a mastery cutoff point (usually 80%). Reliability was thus defined as a percentage of items demonstrating a sufficiently high phi coefficient with test mastery state. Validity assessment differed only in terms of mastery definition. Where available, performance, or "hands on," tests were used as indicators of mastery. Cognitive test results were compared to performance test results using chi square analysis yielding a phi coefficient. Content validity was quantified using a pretest/post test difference measure (Dpp; Cox and Vargas, 1966).

Precenter sociodemographic characteristics of various groups were compared through ANOVA procedures. These comparisons involved not only experimental vs. control groups but also various subpopulations within the experimental group as well as in-depth interviews with a stratified random sampling of families. Precenter incomes, for example, were compared across all subsequently entered occupational areas, as were educational level, family size, and work stability variables.

With respect to the pretest/post test control group design, a number of problems were encountered. Many staff and most prospective student families were unable to comprehend the necessity of having a parallel control group. Additionally, the general public and public officials failed to understand the nature of the program as a research project and criticized the program for sacrificing compassion in the name of some anti-humanistic scientific need. A vigorous public information effort undertaken in reponse by the program met with indifferent success. The assumption of random assignment was on rare occasion violated in the name of humanitarianism or for politically compelling reasons. The terms "control" and "experimental" acquired bizarre connotations. Control group families knew they were in some sort of control group because they never entered the program, and yet representatives of Mountain-Plains kept returning to their homes for six-month, twelve-month, and two-year follow-up interviews. As a result of the difficulties encountered, the two groups ended up slightly less than completely parallel. Monthly income was significantly higher for control group families. Abt Associates (1976 Draft) have demonstrated the fundamental comparability of the two groups, however.

The procedures whereby fairly simple questions were answered were quite complex and extremely varied. The skills of practitioners in many fields were utilized. The Mountain-Plains Program, National Career Education Model IV, was evaluated from every conceivable point of view; the perspectives of the anthropologist, clinical psychologist, experimental psychologist, psychometrician, educator, sociologist, and economist were all interwoven in an interdisciplinary, multimethodological evaluation strategy.

RESULTS

Occupational Preparation

Results presented in this section come primarily from Summative Internal Evaluations of Mountain-Plains Components - Volume I and II (Bunch, 1975-76). Curriculum, tests, completion rates, student evaluations, and employer ratings are discussed.

Curriculum and tests. Occupational curriculum objectives have been categorized by Bloom's taxonomy, consisting of six increasingly complex levels extending from Knowledge (Level 1) through Evaluation (Level 6). Mountain-Plains curriculum objectives are characterized by a bimodal distribution, roughly half being classified as Level 1 and one-third as Level 3 (Application). The remaining one-sixth of the objectives are fairly evenly distributed among Levels 2 (Comprehension), 4 (Analysis), 5 (Synthesis), and 6 (Evaluation). In most instances, the knowledge acquisition - skill application learning strategy seemed appropriate and sufficient. There were a number of attempts to move beyond this fairly straightforward paradigm into the realm of analyzing, diagnosing, and trouble-shooting, primarily in Automotive and the electrical trades. In nearly every instance, it was clear that comprehension of recently acquired knowledge was implicit, i.e., there were very few activities designed specifically to foster comprehension per se.

Course tests proved to be of limited usefulness in terms of reliability. Only one-fourth of all items demonstrated the desired level of discriminability (4,039 items were analyzed). A major exception was Electrical Wiring with approximately 60% of all items being found suitable. Because course post testing is little more than a formality (students who do not demonstrate mastery on the course post test are not required to receive any form of remediation having already mastered all unit tests), it appeared at first that this condition might have been responsible for the poor reliability. However, content validity measures (Dpp) indicated that students did indeed take post tests seriously. Roughly half of all items (46.6%) demonstrated the desired levels of Dpp. The longest post tests (1,060 items), and the one on which students might be expected to do most poorly under non-punitive conditions, actually had 62.8% of its items in the acceptable column. Electrical Wiring again led the way with 71.7% acceptable (content valid) items.

Unit tests demonstrated higher levels of reliability than did course tests. Approximately half (46.3%) of all unit test items yielded phi coefficients of .30 or greater. Radio & TV Repair led the way with 78.9%. A total of

3,930 items were analyzed. Validity (in terms of contingency relationships between cognitive tests and performance tests) was not very high. Median validity coefficient for all 123 unit tests analyzed was .21. Two areas, Office Education and Building Trades, yielded median phi coefficients of .00. However, these coefficients were artificially low due to a statistical artifact. In both instances, all students had demonstrated mastery on the performance test. This condition violates the assumptions of the chi square analysis used to generate phi coefficients. Marketing, Mobility & Transportation, and Appliance Service were characterized by highly predictive (valid) unit tests. All reliability and validity issues are discussed in much greater detail by Bunch (1976b).

Completion characteristics. Overall job title completion rate was 69% (for first choice). By including individuals who dropped one job title and completed their second choice, the rate goes to 74%. Office Education and Marketing & Tourism had overall completion rates very close to program norm (70% and 66% for Office Education and Marketing & Tourism, respectively). Mobility & Transportation was below norm (53%), and Building Trades led the program in completions (78%). Various job titles and curriculum areas within core areas, however, deviated from core area norms. For example, Small Engine Mechanic completion rate was 83%, while Automotive had a completion rate of 44%. Lodging completion rate was 43%, compared to 66% for all of Marketing & Tourism (Marketing had a completion rate of 75%). Completion rate by job title is contained in Table 6.2 of Summative Internal Evaluation of Mountain-Plains Components - Volume I - Descriptive Characteristics.

Student evaluations. Students responded in a generally highly favorable manner to evaluation questionnaires pertaining to both curriculum and staff. Overall scale score means were 18.5 for Scale 1 (Affect) and 18.1 for Scale

2 (Relevance). These values were both well within the acceptable range. There were some exceptions, however. Lodging, Automotive, and Small Engines curricula were not well liked. In addition, Lodging, Food Services, and Small Engines curricula were not considered relevant by many students. Findings for Lodging and Small Engines must be regarded very cautiously due to the extremely limited amount of information received. The negative ratings of Automotive and Food Services appear to be more valid.

Instructor evaluations were also generally highly favorable. Overall scale score means were 18.8 for Scale 1 (Rapport) and 19.6 for Scale 2 (Competence). Again, both means were well within the range of acceptability (any score below 30 was considered favorable; the range of possible scores was from 10 to 60). In core area comparisons, Mobility & Transportation instructors were perceived by students as inferior to all other instructors on both scales. There were no basic differences among Office Education, Marketing & Tourism, and Building Trades instructors.

Employer evaluations. Ratings received from 84 employers of exited students were analyzed. Approximately 85% (82.5%) of all skills and 90% (89.2%) of all employability traits were rated as satisfactory or better. Thus it may be concluded that in most instances, employers were quite satisfied. No major deficiencies were noted except in the area of diagnosis in some job titles. Complete results by curriculum area are contained in Employer Evaluation of Exited Mountain-Plains Students (Bunch and Myers, 1976).

Summary. Occupational preparation at Mountain-Plains may be viewed as quite successful. Although tests are of fluctuating quality, curriculum is generally appropriate, sufficient, and thorough. Approximately three out of every four students entering the program complete. The various components are commonly regarded by students and employers alike as worthwhile. Table 1 contains summary ratings of each occupational area in terms of curriculum, tests, student ratings, employer ratings, and overall evaluation. Internal efficiency is assessed in terms of costs per completer, attended vs. estimated hours, instructor/student ratios, and absolute number of completers.

Other Curriculum Areas

Three program areas, Early Childhood Education (ECE), Family Core Curriculum (FCC), and Foundation Education (FE), are discussed here. These three areas (as well as the affective areas of Counseling and Career Guidance) collectively distinguish Mountain-Plains from traditional vocational programs. The objectives of ECE are to develop the affective, cognitive, and psychomotor dimensions of Mountain-Plains students' children. The purpose of FCC is to provide basic life skills over and above the technical skills developed in Occupational Preparation. FE focuses on basic skills, both verbal and quantitative, requisite to efficient functioning in all occupational environments.

Every student entering Mountain-Plains enters Family Core Curriculum. Approximately 95% complete. Evaluations of the area indicate that it has little measurable impact on students. Curriculum objectives tend toward triviality, and tests are neither very reliable nor valid. It must be pointed out that FCC is usually negotiated in about 40 hours at a cost of $200 or less. Students tend to rate the curriculum and instructors very positively, however, and subjective staff reports from other areas note student improvement in FCC objectives. The problems in curriculum and emphasis have been noted, and FCC has become part of Student Services Division where it is undergoing major changes.

Table 2

Summative Ratings of All Occupational Curriculum Areas[a]

Area	Curriculum	Tests	Completion	Internal Efficiency	Student Evaluations	Employer Evaluations	Overall
Office Education	Excellent	Good	Excellent	Good	Excellent	Excellent	Excellent
Lodging	Good	--------	Poor	Poor	Fair	--------	Fair
Food Services	Fair	Good	Good	Good	Fair	Good	Good
Marketing	Excellent	Excellent	Excellent	Good	Excellent	Excellent	Excellent
Automotive	Fair	Excellent	Poor	Poor	Poor	Fair	Fair
Small Engines	Fair	Good	Excellent	Good	Fair	Excellent	Good
Carpentry	Good	Fair	Excellent	Poor	Excellent	Good	Good
Electrical Wiring	Good	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
Plumbing	Good	Good	Excellent	Excellent	Excellent	Excellent	Excellent
Heating Systems Services	Good	-----	Excellent	Excellent	Excellent	Excellent	Excellent
Refrigeration/Air Conditioning	Good	Good	Good	Fair	Excellent	Good	Good
Appliance Repair	Good	Excellent	Excellent	Fair	Excellent	Poor	Good
Radio & TV Repair	Good	Good	Excellent	Excellent	Excellent	Fair	Good
Electric Motor Repair	Good	Good	Excellent	Good	Excellent	-----	Good
Drafting	Good	Excellent	Good	Good	Excellent	Good	Good
ALL AREAS	Good	Good	Excellent	Good	Excellent	Good	Good

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[a] Cells with ---- indicate that information was unavailable.

Foundation Education has as its aim the development of verbal and quantitative skills to predetermined levels thought necessary and sufficient for entry into various job titles. For example, a clerk-typist must demonstrate mastery of eighth grade mathematics skills and twelfth grade verbal skills, whereas a Radio & TV Repairman must demonstrate tenth grade mathematical and twelfth grade verbal achievement. Grade levels are estimated pre and post-program through administration of the California Test of Basic Skills (CTBS). Allowing for measurement error, students typically gain two years in quantitative achievement and one year in verbal achievement. Roughly 80-85% of all students reach their goals. In addition, 29 out of 70 individuals beginning GED training finished and took the General Educational Development examination. All 29 passed and received GED certificates.

Affective Domain

Results of Career Guidance, Counseling, and Parent Involvement are presented here. In most instances, findings have been summarized from the Affective Evaluation Series (Conrad, 1975-76). The interested reader is directed to this series as well as to specific affective evaluation reports referenced in the discussion.

Career Guidance. These comments are derived primarily from Summative Analysis of Career Guidance, Parts I & II, Career Guidance No. 13 (Conrad, 1976).

Overall, results for Career Guidance are quite favorable in terms of program goal/objective accomplishment. The exhaustive treatment of the career maturity variable by subdimension and by subgroup reveals the complexity involved in impacting such a dimension. "Career Maturity" seems so simple rolling glibly from the tongue and written neatly in an objective list.

Clearly, many influences, including sociodemographic "history," counselor assigned to initial treatment, and type and extent of reinforcement in extra-guidance treatments all influence career maturity attitudes and can influence its various dimensions differently.

Validity of Guidance Counselor Ratings. Career selection is a strong point of the program; although guidance staff may have Festingeristic investments in rating a choice favorably because of their role in its facilitation. A reluctance to make a bad (failure) prediction (a reluctance many would argue is a general debilitating factor with helping professionals) is seen in the completion prediction ratings which would support the idea that choice ratings may have an artificial inflation. Support for the quality of career choice, on the other hand, accrues from the fact that only about one student in thirty changes career choice (Source: Mountain-Plains records).

Effects of Program Changes. It seems that the Mountain-Plains Program as operating in 1974 may have been somewhat more effective in the development of career maturity than subsequently. Persons wishing to model on Mountain-Plains for guidance services which have objectives beyond career choice might be advised to consult the earlier program, particularly staff characteristics.

Staff Effects. Consistent with the final cognitive analysis (Bunch, 1976), Career Guidance analysis reveals that different counselors achieve different results. Examination of data shows that impacts vary over dimensions of career maturity and by ethnicity of clients. A major conclusion shared by all Mountain-Plains research staff is the importance of "staff competency." This seems to be at least as important as the formal program structure within which the staff member functions in many cases.

Modeling and Maximum Possible Gain. An overall evaluation of guidance and other developmental data at Mountain-Plains accrues strong support to a "modeling" interpretation of developmental effects. Where students enter with scores below adult norms, they tend to make gains. Where scores are at or above adult norms, they tend to remain unchanged or to regress slightly.[11] The maximum developmental "power" of any Career Guidance program would thus be the average development of the staff on the dimension of development intended. To the extent this perception is valid, a major error of omission in the design of Mountain-Plains was a failure to preinsure a high level of career maturity and productive vocational attitude/role perceptions among staff by an appropriate combination of selection and training.

Generalizability. A major problem with data in this report is that different subjects appear in nearly every analysis. This results from: 1) The necessity of filling cells in the two dimensional analyses; 2) The fact that testing on different variables was initiated at different times--the guidance evaluation design being implemented relatively late in the program; and 3) Differences in personnel, testing, and administrative procedures that made it more probable that certain subgroups or tests would be missed. Wherever possible, data has been cross-checked in other analyses and/or verified by comparison to filed or previously reported data. Still, one would want to be very careful about drawing, for example, a conclusion about role-playing effects on Indians from the sample of eight on which full data is reported. The overall report gives indications and insights.

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[11] This cannot be dismissed as "mean regression" as the adult norm and Mountain-Plains population norm are different. It could also be argued that the phenomenon of mean regression may itself have a "mass modeling" effect component.

However, as is the case with evaluation research generally, only the complexity of the situation is proven.

Counseling. These comments are derived primarily from Summative Evaluation of Counseling, Parts I, II, III, Counseling Services Report No. 33 (Conrad, 1976).

Complexity. Evaluating anything on a large scale over time is a very difficult process. Variables requiring control proliferate. Mountain-Plains analysis is no exception. Given the initial assumption for affective evaluation--namely that asking the question "did it work?" is naive--the task of identifying the relevant subgroups and interactions emerges. Naivety caused initial optimism about "n" size for such analysis. It is currently and retrospectively clear that some desired analyses cannot be made because of insufficient subjects in some desired "cell." Others can only be accomplished by condensations of subgroups that subtract from the precision and interpretability of the analysis. Some standard measures used do not have scales that, even given "evaluators license," relate directly to certain objectives of the program. The Mountain-Plains developed Student Inventory, for example, has inherently different scales for the three SMS subgroups; making analysis on the same basis as the 16PF and POI impossible. The unavoidability of subjects escaping one or another required testing (e.g. program deserters) leaves some question about the generalizability of results. As is the case generally with evaluation research which focuses on the relevant rather than the easily measureable, conclusive resolution of questions is beyond the current state of evaluation methodology--especially when impacted by the larger inevitable complicative interactor--human fallibility.

The Development Process. Change and developmental processes are complex, and are especially so in the affective domain. On many test scales a majority, and on occasion, all, of the subgrouping variables were shown to vary with subgroup score changes. Summarized results (see referenced report) may be of equal or more value to program developers than the "Did-they-or-didn't-they?" analysis of improvement. Program developers who have objectives related to one of the test scales analyzed (and the three instruments do cover a broad area of the human psyche) can derive indications of what may influence development on a particular program objective. For example, if a treatment population has a problem with tension level, the results on the 16PF Q_4 scale indicate that program factors, such as the occupational training area, are probably the major influence in sustaining that problem, and that therapeutic counseling is not the method of attack most probable of success. Additionally, the absence of interactions indicates that this effect is constant over elements of the treatment population such as age, sex, and ethnic group. This is one example.

A similar lesson emerges from consideration of the Developmental influence of most of the 39 test scales so analyzed. Both the confirmation of the complexity of the developmental process and some beginnings at sorting that complexity are contained in the current referenced analysis.

Susceptibility to Change. At least within the environment and treatments under study, females (especially single females with dependents), and the mid-twenties to mid-thirties age group are clearly the most likely to change favorably and the most likely to complete the program.

Single females with dependents are also the least affected by changes in treatments as they differ over time periods. Some factor evidently obtains with this group which is somewhat uniquely susceptible to Mountain-Plains (a factor which might be kept in mind by those who develop and evaluate such programs as WIN). Minority students, on the other hand, seem to be most susceptible to treatment changes; showing more favorable development in early and middle program periods than in later periods.

Counselor more frequently affected development than did any other factor (except completion which is more likely an effect than a cause), but sex coupled with marital status (as earlier mentioned), age, and ethnic group are similarly influential. The frequent interaction (seen on all but one POI scale) of counselor with ethnic group highlights the problem of counseling minority students. However, examination showed that the counselor who was most effective with ethnic groups was a member of the predominant ethnic minority (American Indian). The counselor most effective with minority students was also most effective with students generally, and the second ranking with minority students also ranked high with students generally. Even in the face of a vast treatment plant such as Mountain-Plains, the individual counselor emerges as a (maybe the) key to affective development. (In fact, the program period developmental differences are, at least in part, likely secondary counselor effects.) Counseling staff in those periods where development, particularly of minority students, was unfavorable, were fewer in number, and both the counselors and counseling administrators were less experienced than in periods showing favorable development.

Counseling Objectives. Were affective efforts, generally counseling efforts in particular, at Mountain-Plains focused around the correct objectives? A large volume of research as reviewed in the referenced report says, "Yes." However, different students experience difficulties with different subsets of counseling objectives. Objectives reflect the general needs of the population, and inform administrators of affective components of the types of problems they should be staffed and structured to attend. In narrating the 16PF results (referenced report), the bidirectionality of scales, and the possibility that changes in one direction could be favorable for some persons and subgroups and in the other direction for others was cited. It is, therefore, particularly easy in group studies to lose identification of positive effects to the facts of life and measurement--particularly with an instrument such as the 16PF. (It is also possible with a directional instrument such as the POI where changes needed and made by a significant minority of subjects can be overwhelmed by "no-change" needed or made by the majority.) This is illustrated by the fact that those scales showing most (and most favorable) changes are exactly those where the vast majority of the entering population, regardless of subgroup, need development and thus receive focused attention (e.g. all of the SI scales, the 16PF C and O scales, the POI C scale).

Suggested Further Analysis. A true measure of program success for an individualized program such as Mountain-Plains would require a knowledge of those objective areas where a student experienced special problems, and received focused treatment. Examination of individual records and profiles, assigning success categories via systematized professional judgment of these records and summation of these over students must be accomplished. The manpower and recordkeeping that this would require are phenomenal. The data for such an analysis, however, exists, although resources have been insufficient to properly exploit them. Developmental profiles for every student and narrative discussion of treatments and outcomes for all students prior to mid-1974, and a sample of 1/3 for the remainder exist. It is suggested that these records might be made available, for example, to a university counseling department filled with "free manpower" in the form of graduate students pursuing theses and dissertations, for such analysis.

Scales Used In Evaluation. The conditional nature of score change in a particular direction on the 16PF requires extensive scale-to-scale analysis for determination of favorability and argues against its use in group evaluation, or at least against such use of the majority of its scales.

Although the POI proved most useful, the subsample study using the Tennessee Self-Concept Scale (See Counseling Services Report No. 20 and the Case Studies Reports as discussed and referenced in Part II) takes clearer focus on the Self-Concept--the paramount counseling objective--and is a more sensitive measure. Its use in conjunction with, or in some instances in place of, the POI could provide a better picture of development in this area.

The Student Inventory is the most reliable of the measures, and the most relevant as its item content was taken directly from student problem statements. However, its scales are highly interdependent and one can substitute "overall problems" for the name of any particular scale with considerable accruacy.

Summary for Counseling & Programming Recommendations. From synthesis of the three parts of the referenced report come a set of perceptions and recommendations.

1. A, perhaps the, key variable in any therapeutic equation is the individual counselor. Some counselors were obtaining spectacular results when the overall organization of the Mountain-Plains Program more resembled the aftermath of an earthquake than a developmental vehicle.

Others were still unable to assist their students and clients after both procedures and geographies had been ideally organized and intensive training provided. Mountain-Plains was at least partly guilty of the fundamental mistake of current social programs which University of Michigan psychologist David Guttman recently described in Commentary as, ". . . trying to find technological solutions to personal problems."

2. No amount of skill training will enhance the therapeutic ability of a counselor whose own personality is in disorder. There was no relationship between amount of formal counselor education completed and counselor effectiveness on any of five criteria explored in a preliminary study (supervisor rating, client rating, client psychological test score gain, teacher ratings, administrator ratings). (See Part II of referenced report.) Nor was a very extensive in-service program successful in enhancing the therapy skills of those counselors whose personality profiles showed average to below average strength. It is the opinion of Mountain-Plains research staff that those counselors needed to expose themselves to extensive therapy (an option that was available) in order to make use of past (or future) training, but that one aspect of their "problem" was an unwillingness to take (or fear of taking) such an intensive focus on their own development. It is a conviction of the research staff that the key variable in counseling (for counselor training) is counselor selection. Some will be able to absorb training and become effective, but others will, to paraphrase Whitley and Associates (1972), ". . . only acquire vocabulary of words and phrases which sound professionally appropriate." To the extent the latter group are exposed to, and allowed to complete preparatory

programs, training resources are wasted, and counseling degrees and driver's licenses will be similarly useful predictors of therapeutic effectiveness.

3. Specialty counseling is irrelevant to disadvantaged clients. The key reality to problems experienced by Mountain-Plains students (and the disadvantaged generally) is their interactive nature. At an early point in time it was decided that Mountain-Plains needed a specialty counselor for each problem.[12] A marriage counselor. A minority counselor. An alcoholism counselor. A self-concept development counselor. A women's counselor, etc. But the primary critical problem of one ethnic minority was that self-concept problems were coped with by drinking behavior that caused or exacerbated marital problems that usually wore most heavily on the woman. To which counselor should this family be assigned? Should each session have the husband and wife plus five counselors? It became quickly apparent while a counselor with skills and interests in a specialty area was a valuable asset, all counselors must have broad therapeutic skills in order to deal with the range of problems offered. Each counselor had to be at least sufficiently conversant in all areas to consult with, and use the knowledge of, the staff specialist without including each needed specialist in each session.

4. To the extent that an extra-counseling environment can be structured, counseling success can be enhanced. While this may seem too uncontroversial a statement for inclusion, it is especially relevant to Mountain-Plains, and needs to be included. In those instances where

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[12] A view that was unable to sustain itself for long.

the willing and competent cooperation of a spouse, and/or neighbor, and/or teacher, and/or . . . could be enlisted, therapy objectives were more likely to be accomplished. The range of influences shown for score change on psychological scales show the number of contributors (or retardants) which bear on a particular personality trait or process. Probably a second important deficiency of Mountain-Plains (although a failed attempt to achieve a known good rather than one of misdirected effort) was the inability to consistently have available/enlist-the-aid-of competent persons in the client's environment. Further programs which share Mountain-Plains' goals and population should select all staff, from administrators and teachers through aides and secretaries, for their willingness to cooperate in affective development efforts[13] as well as their ability to be or to learn to be useful partners in that process.

5. Separation of personal/family therapeutic counseling from Career Guidance activities by department and by definition of responsibility was a major innovation of Mountain-Plains, and one that bears more widespread use and evaluation. The relationship of personal development to career development is highlighted in current data by the fact that vocational development as measured by the Student Inventory was affected by assigned therapeutic counselor. While the interactivity of personal and career/vocational variables is given, each is sufficiently important to warrant separate specialized attention. This might be an especially useful idea for both "mental health" and "social

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[13] Self-concept has been shown to be a significant predictor of post-center income. While correlation does not establish cause-effect, current and previous sub-sample analyses show self-concept development to accrue during treatment at Mountain-Plains.

work" professionals who may overlook the vocational aspects of "personal" problems, as well as for such professionals as ESCS counselors and high school guidance counselors who may overlook the role of inter- and intra-personal skill/strength in vocational success and satisfaction. In line with number four above, cooperative efforts from several directions are the approach most probable of success in impacting "counseling problems"--be they those usually addressed "in vacuo" by guidance, social work, or therapy professionals. It was the experience at Mountain-Plains that such disciplines do indeed have functions sufficiently important and specialized to be assigned to different persons and components. However, it is the full cooperation of "counseling" professionals with each other (and with teachers, friends, and on occasion even with law enforcement professionals), that eventuated to the greatest benefit of the student/client. The *separate but concerted* use of professionals and services normally the province of separate (and often disputatious) professional enclaves is a Mountain-Plains procedure worthy of emulation. Currently, helping services seem sidetracked by two faces of a critical problem--the helping professional working in isolation who either attempts to provide services beyond his scope--or ignores his responsibility for problems on the borders of (or beyond) his domain. *Mountain-Plains is an excellent model for the separation, specification, and reintegration of helping services*.

6. *Isolation was an asset to the Mountain-Plains Program*. From all directions (and motivations) have come complaints about the isolated location of the Mountain-Plains Program. Isolation has been the "whipping boy" for ills ranging from cultural deprivation (which is acknowledged) to ability to attract and hold staff and students, through paucity of

interaction with funding agency (and other) professionals--even unto the cause of medical problems. Even should these arguments be valid, isolation was still a key factor in whatever success Mountain-Plains obtained. Students often stayed simply because it was so hard and far to go. The bleak geography and nature of the "outpost" community brought problems to the surface[14] as there were few distractors and it was difficult or impossible to avoid persons and situations. Isolation elicited/exposed problems and weaknesses thus providing an opportunity for Mountain-Plains to address same.

7. Self-concept is the central difficulty of students who attended Mountain-Plains. Sources as diverse as psychological tests and secretaries have indicated that to the extent one term captions the problems of the problems of the population it is "self-concept." Counseling Services Report No. 20 (Mayotte and Conrad, 1974) highlighted both the nature of this problem, and the fact that improvement in self-concept could be obtained by two diverse counseling treatments applied in group settings--one of which required only average counseling skill to execute. Mountain-Plains experience would suggest that all relevant treatment for disadvantaged populations should include a specific treatment component aimed at self-concept development. This may be particularly true for treatment aimed at enhancing employability. (Case Studies follow-ups showed self-concept to be most predictive of income among a range of measures.)

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[14] Staff and students alike were fond of saying that the environment caused problems. The more accurate statement is that the environs brought underlying problems to the surface and made it very difficult to ignore, hide, avoid, or otherwise escape them.

8. To work with disadvantaged persons, staff: 1) must understand that poor does not mean stupid, 2) must be willing and able to confront students. Program staff, including some counseling professionals, seemed often to be inhibited in their ability to assist students by a concomitant belief that "poor" meant stupid, and by an unwillingness to confront manipulative behavior. Information from research and counseling that the mean and variability of I.Q. scores for Mountain-Plains students did not differ significantly from those of the adult population generally is yet another example of the futility of trying to alter belief with simple information giving. Staff for such programs should be selected for and/or intensively trained such that the "stupid-poor" assumption is absent or disappears, and that both the necessity for confronting and ability to confront are qualities of staff generally.

The foregoing list is by no means exhaustive of the affective development findings/implications from the Mountain-Plains Program. It is limited to those elements most important: 1) To fulfillment of personal, family, and vocational development as embodied in objectives assigned primarily to the therapeutic counseling component, and 2) For the counseling profession. Other related implications can be pursued in the thirty preliminary studies and in the Summative Reports for other affective components. It is also limited by the desire to avoid losing major implications in a sea of those which are interesting and potentially useful, but not central. Data available in the three-hundred plus data tables (referenced report) in the final analysis and preliminary reports is far from exhausted, and its further analysis and interpretation--either formally or by individual readers--should prove fruitful.

Parent Involvement. These comments are derived primarily from Summative Evaluation of Parent Involvement (Conrad, 1976).

There are identifiable program effects on parenting attitudes that obtain at the time of exit. These are centered in the male and Chicano subgroups.

The male subgroup findings cannot be clearly interpreted. Decreased resistance to learning is quite favorable in that male resistance to affective components was a constant and critical Mountain-Plains problem. A nurturance scale was revised for Form E-2 because the preliminary score distribution was skewed to the "agree" end of the scale. To the extent that a less favorable nurturance score results from a general personality development that decreases tendency to extreme responses the result is favorable. However, should this be the case it is possible a parenting component effect is not being measured, but rather a general program effect influenced by guidance or counseling.

The most clearcut result is the tendency of Chicano students to become concomitantly less authoritarian and less indulgent. While the value of the program for the majority of students is in doubt, the positive effect with Chicanos is clear, and that it is stronger than for other ethnic groups is confirmed in the analysis of covariance results.

The six Indian subjects for whom pre- and post tests are available are too small a sample to generalize confidently. (Fewer subjects accrue to the ethnic subgroup analysis due to failure to designate this variable by some subjects - it is believed that some of these subjects were Indian.)

At the time of analysis, eighty students had been pre- and post tested on Form E-2 of the Child Raising Opinion Questionnaire (CROQ). On the 91 items of Form E-2 there were statistically significant differences on thirty-nine items. Of these differences, change was in a favorable direction on 14 items and in an unfavorable direction on 22 items (three items are ambiguous). (Items showing favorable and unfavorable changes are listed in Appendix B of the referenced report). Clearly the changes on specific questions did not argue favorably for the effect of the parenting program on students generally.

Programming Recommendations

1. Parent training may be more likely to achieve results if attached to a clearly affective component (Counseling) or one clearly focused on children (Early Childhood Education). In discussions with counselors and formal interviews with Early Childhood Instructors it was clear that the Parenting Program was operating in an "affective vacuum" most of the time. Rather, its geographical and administrative home was with a cognitive life skills component.

2. The parenting class may be most appropriately taught by laboratory rather than curriculum mastery methods, or a balanced mix of the two. This implies staffing with those skilled *specifically* in child development and/or counseling skills rather than those whose expertise is in traditional cognitive instruction. This view is reinforced by the fact that at entry students already score as high as Mountain-Plains staff on endorsement of "correctness" of "objectively correct" statements concerning nurturant behavior. Learning "facts" about child development is not seen as the total, or perhaps major, problem. Skill in use of knowledge and child acceptance (a prerequisite of which is self-acceptance) emerge as critical areas.

Sociodemographic Changes

Conrad, Myers, and Coyle (1975) conducted in-depth interviews with 23 exited

Mountain-Plains families, both completers and resigners, and compiled a 25-volume series of case study reports (two of the reports were summaries, while 23 dealt with specific families). In *Case Study Report No. 1 - Work and Income*, it was pointed out that post-center employment rate of household heads was twice that of entering families. Income increments were $2,600 per year at six month post program and $3,400 at twelve month post program. Monthly income gains were estimated at $180, as opposed to $55 for an equivalent control group. Thus the actual gain attributable to Mountain-Plains is about $125 per month. More current employment information reflects an absolute positive monthly income differential at six months post-program of approximately $350 for completing families.

In addition, the case studies also revealed that students demonstrated gains in self-concept (Tennessee Self-Concept Scale), life success ratings (Cantrel, 1965), and socioeconomic status (Miller, 1964). Using test comparisons for correlated samples, departed students were found to score significantly higher on the measure of success rating ($t = 2.56$, $p \leq .05$). The t value for socioeconomic status (using Census Bureau rating scales) was 2.41, significant at the .05 level. It was further noted that self-concept is directly related to head-of-household income ($r = .52$).

The interdependencies of program components are immediately obvious when one examines changes in the sociodemographic characteristics of students. Wage increases might be attributed largely to Career Guidance, Occupational Preparation, and Placement. Self-concept gains are primarily attributable to Counseling efforts. However, improved earning power is clearly related to enhanced self-concept. Projecting somewhat, it might be argued that improved self-concept is a prerequisite to career stability and advancement. These latter factors, in turn, promote self-concept, success rating, and socioeconomic status. Socioeconomic status is seen here as entailing many variables not spelled out on a pay stub. Mountain-Plains appears to have a positive effect on all these variables including the dollar amount at the bottom line.

SERENDIPITOUS FINDINGS

As is the case with most long-range research projects, certain unplanned but interesting results were obtained. These findings can best be referred to as serendipitous. Some of the major ones are discussed in this section.

Indian Problems

One of the basic tenets of Mountain-Plains, and indeed of all individualized programs, is that nearly all who enter can succeed. The Mountain-Plains system was designed to function largely independently of the peculiarities and idiosyncrasies of individuals involved. A major finding, with respect to Indian participants, was that this is not necessarily feasible. A number of problems peculiar to Indian families were uncovered as a result of an investigation into the dropout rate of Indian families, nearly twice that of majority students at the time of the study. These were alcoholism, financial problems, marital conflicts, extended family influence, isolation, adjustment to structure, motivation, program expectations, reservation life style, child care, identity diffusion, territorial insecurity, peer pressures, and self-perception (Jore, Conrad, Fenenbock, and Schall, 1975). While many of these problems are not strictly Indian problems (e.g., alcoholism, marital conflicts), being Indian and being at Mountain-Plains seemed to aggravate the problems.

Central to problems encountered by Indian students were racial identity, cultural differences, and family structure. Jore, et.al. (1975) found that

Indian spouses were much less likely to enter occupational preparation because they were extremely reluctant to leave their children in the care of a non-Indian babysitter. Other family ties also proved troublesome. Although it was known from the outset that the extended family (grandparents, uncles, aunts, cousins) plays a large role in Indian life, the extent of this role was not clearly known. Many Indian students had very severe attendance/pay problems as a result of returning home for weddings and funerals of extended family members or friends. Extended family ties also contributed to a feeling of isolation, even among Indians whose homes are less than an hour's drive from Glasgow. This feeling of isolation contributed to negative self-perception, marital problems, and alcoholism.

Alcoholism and marital conflicts seemed to go hand in hand. Afternoons or evenings of drinking turned into days and extended weekends of drinking, wife-beating, and ultimately into police intervention. Retaliation to wife-beatings was often in the form of infidelity. This in turn led to more alcohol problems, more beating, and more police involvement.

Cultural differences also led to problems. Time-consciousness and property possession were two critical concepts. Among the Mountain-Plains Indian population, there was less emphasis placed on time specificity than among the majority, Caucasian population. Conrad and McMahon (1974) compared Time Competence (Tc) scale scores on the Personal Orientation Inventory (Shostrum, 1963) for majority and Indian students. The resultant F value of 6.00 had a p value of less than .05, indicating that majority students are much more "time competent," or focus more clearly on the present than Indian students. Property possession differences relate to family structure. A primary value of Mountain-Plains Indians was to share possessions with extended family, friends, and ultimately, the tribe. The majority, or white middle-class, value is to accumulate possessions to share with the nuclear family. In Indians, sharing often took the form of buying rounds of drinks, generous lending to poor credit risks, and other activities viewed by white society as "unwise spending." A common result of lending and spending was a week without grocery or rent money. The situation often escalated into marital conflict, drinking, and the rest of that cycle.

The designers of Mountain-Plains started out with perhaps a naive view that the program could work for nearly everyone. The learning and developmental strategies implemented were openly praised by external evaluators. Much to nearly everyone's dismay, it was discovered that some people are different and do not respond to treatments geared primarily toward white middle-class society. (Interestingly, however, the Chicano ethnic group experienced success equal or excelling that of the majority.)

Personal Factors

A corollary to the tenet that all or nearly all who enter can succeed is the proposition that program design is superior to program staff. Stated somewhat differently, in a well-designed, systematized program, strengths and weaknesses of individual staff have less effect on outcomes than does the program design; staff are interchangeable cogs in a giant gear train. This supposition also proved to be probably half-true. Individual staff members left indelible marks on a number of program areas. It is the case, however, that in nearly every instance highly positive individual impacts correlated with maximally effective use of the systematized design, and negative individual impacts correlated with indifference to, or subversion of, the established system.

Time series analysis of career guidance and counseling effects, for example, reflect staff input. Charting several key objectives of these two areas, one notes that dips and valleys coincide with or follow shortly after the departure of a supervisor or other key staff member. The sharpest decline in student self-actualization scores followed by only a few weeks the departure of the three counselors who consistently received the most favorable ratings and who themselves scored high on tests of self-actualization.

Problems in Automotive were largely traceable to one individual. Student evaluations indicated that the instructor was perceived as incompetent and difficult to work with. Subsequent investigations validated these evaluations. The occupational area with the lowest completion rate (Lodging) is presided over by an instructor who consistently receives very favorable competency ratings but extremely unfavorable rapport ratings.

Family Core Curriculum instructors have consistently made up for indifferent or poor curriculum with their own talents. Students typically express great satisfaction with Family Core; yet, test scores indicate that they learn little, and curriculum evaluation reveals that there is little to be learned. The Family Core staff, realizing the curriculum deficiencies, have made a concerted effort to counteract the effects of relatively low-level curriculum. Although the tests (geared to the curriculum rather than to the instruction) reflect no change, a great many students later cite Family Core Curriculum as the most worthwhile part of Mountain-Plains.

The questionable viability of a person-free learning environment is very apparent to Mountain-Plains. Investigators have demonstrated that staff do indeed have a very significant impact at Mountain-Plains, although it was not our original intent to prove this.

Career Guidance and Placement

Seninger and Stevenson (1976) have pointed out that appropriate placement plays a critical role in post-center income gains. While families in general earn $2,600 a year more after program exit than before program entry, based on Case Study data, families whose household heads were placed in their areas of training showed gains of $3,100 a year. Families in which both spouses were placed in their areas of training earned an additional $3,350 per year over precenter income, or $750 a year more than families in general. Although income increments had been predicted, neither the specificity of casual factors nor the absolute magnitudes discovered had been expected.

Career Guidance provided insight into a key program concept--interdependence. While Career Guidance is a distinguishable program component with its own objectives and procedures, many of the competencies developed in this component require reinforcement in other program areas. Career maturity (the ability to make mature, rational decisions about employment based on appraisals of one's skills and labor market forces) is one of these objectives. Analysis of Career Guidance results (see Affective Domain - Career Guidance section of this report) shows marked increases in career maturity at the end of Career Guidance activities. Yet, by program exit, the gain has dropped precipitately for most students. The explanation offered is that decision-making maturity is not reinforced in occupational areas. It was not the negation of maturity gain that was surprising; rather, it was the apparent lack of follow-up of instructors. It had been believed that no formal orientation to career counseling would be necessary because instructors should have certain counseling skills. The serendipitous finding here was that instructors seem to believe that they instruct and that Career Guidance Specialists guide.

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A REGIONAL PROGRAM IN
COMPREHENSIVE FAMILY EDUCATION

UPDATED DESIGN FOR INTERNAL EVALUATIONS OF MOUNTAIN-PLAINS PROGRAM

BOX 3078 GLASGOW AFB, MONTANA 59231

MOUNTAIN-PLAINS
EDUCATION
ECONOMIC
DEVELOPMENT
PROGRAM INC.

UPDATED DESIGN FOR INTERNAL EVALUATIONS OF MOUNTAIN-PLAINS PROGRAM

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This Study is a Product of
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David A. Coyle, Director

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Updated Design for Internal Evaluations of Mountain-Plains Program

Implicit in all proposed research activities defined in Mountain-Plains Proposal: FY76 R&D Completion; Volume 1 Program (July 3, 1975) is an evaluation of Mountain-Plains components as well as the entire Mountain-Plains program. The purpose of this update is to provide an integrated structural overview of the proposed (and ongoing) evaluation process and to define more explicitly the procedures employed in answering the questions, "Is the program internally successful? For whom is the program successful? Which components of the program are internally successful?" Evaluation designs for Parent Involvement, Early Childhood Education, Career Guidance, and Counseling have been developed and are described in Volume 1 of the FY76 proposal as well as in the detailed individual evaluation design reports covering these activities. The components focused on in this paper are primarily those of Foundation Education, Family Core Curriculum (including the cognitive aspects of Parent Involvement), and Occupational Preparation. The model for integrating the results of evaluation of all program components is a discrepancy evaluation model developed by Malcolm M. Provus.[1]

The Model

The discrepancy evaluation model consists of five phases, each of which contains a decision point. Each decision is based on the degree of discrepancy between the ideal (goal) and the observed. This paradigm is especially appropriate for Mountain-Plains in that goals are quite clearly specified from the management level down to the smallest component of instruction. At each decision point, one of the following choices must be made: reject, accept with revisions, accept unconditionally. The five phases are design, implementation, evaluation of interim products (formative evaluation), evaluation of final products (summative evaluation), and cost/benefit analysis, in that order. Each successive phase must end in acceptance before the program can go to the next phase. As described in the FY76 proposal, Mountain-Plains has negotiated the first three phases of evaluation and is now conducting summative evaluation. However, some new information is also being gathered which relates to the first three phases in an effort to integrate separate component evaluation and to solidify that research. The structure of on-going evaluations is elaborated in the following.

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[1] Malcolm M. Provus, Discrepancy Evaluation for Educational Program Improvement and Assessment, Berkeley, California: McCutchan, 1971.

Phase I: Evaluation of design. Current assessment of content validity of Mountain-Plains curricula and tests will also serve as design evaluation. The stated objectives of the program, amplified and specified down to the unit and LAP level, will serve as the standards against which all curricula and test items are judged. Judgements to this point have come and continue to come from individuals with no vested interest in our curricula or items; i.e., third party contractors and User Trial participants.

A number of reports by individuals or agencies have been submitted to M-P/NIE in the past two years as elements of a monitoring activity of Mountain-Plains progress. The reports are, for the greater part, favorable. The objectives of both affective (Herr et al)[2] and cognitive (Zifferblatt)[3] components have been scrutinized and found to be realistic and well stated. The draft submitted to NIE by ARIES Corporation in 1974 describes the Mountain-Plains curricula as "rigorously and thoroughly developed[4] "(p. 191)." The extent to which this opinion is held by a wider audience of practitioners is being assessed by the User Trial of Mountain-Plains Curriculum.

Mountain-Plains developed curricula and tests have been experimentally introduced to several sites in Oregon, California, Arizona, and Montana. At each of these sites, instructors and students are asked to evaluate Mountain-Plains curriculum products using several forms developed especially for User Trial. These evaluations focus on the relevance, difficulty, and transportability of curriculum content and delivery system. Three forms in particular (CD-3, CD-4, and CD-7) will be useful for content validation. Form CD-3 is an instructor evaluation of learning materials; CD-4 is an instructor evaluation of curriculum procedures; and CD-7 is a student evaluation of learning materials and procedures. The standards by which Mountain-Plains curricula are judged will vary among the 46 instructors and 577 students but should provide a good idea of the acceptability and feasibility of using Mountain-Plains curricula in settings other than Mountain-Plains; i.e., the quality of the design of Career Education Model IV is being thoroughly assessed.

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[2] E. L. Herr, R. Conrad, R. Manley, and R. Seeley, "Counseling and Career Guidance with Rural Disadvantaged Families in a Residential setting."

[3] S. M. Zifferblatt, R. England, and D. A. Coyle, "Curriculum Design for Social Change."

[4] ARIES Corporation, "Survey Report on Rehabilitative-Type Programs in the Mountain-Plains States" October 9, 1974, p. 191.

The methodology for this assessment has been provided in "User Trial of Mountain-Plains Curriculum: Progress Report" (October, 1975).

Phase II: Evaluation of implementation. The extent to which the day-to-day activities of the program are consistent with program objectives and philosophy is the object of Phase II evaluation. This process was not only critical in the early days of the program but continues to be a concern. One of the forms developed for User Trial in an effort to monitor off-center execution of Mountain-Plains curricula is also being used on-center. The following specific questions are representative of the 24 criteria by which program implementation is judged:

Are raw test scores logged on SPRs?
Are students using LEGs?
Are students using LAPs as prescribed?
Does instructor-student interaction conform to Mountain-Plains design?
Is the SPR being used as designed?

In those instances where discrepancies exist between design and execution, the following questions have been asked:

Does the instructor (test technician, etc.) understand the basic program design?
Does the individual involved accept the design as viable?
Are there circumstances which prohibit the individual's conformity to design?

This process enabled program administrators to correct potentially harmful situations early in the program and to keep a constant feed-back mechanism active throughout the life of the program, assuring that the program as an entity functioned as intended.

Phase III: Formative evaluation. The end of FY76 marked the end of formal formative evaluation. Most of the reports submitted to NIE during that year dealt with formative aspects of the various components of Mountain-Plains (a list of these reports is contained in Volume 1 of

Mountain-Plains Proposal: FY76 R&D Completion, pp. 20-22.) These reports range from job placement summaries by curriculum area to realiability studies of Mountain-Plains-developed evaluation devices. Those discrepancies noted between the observed and expected were corrected for each component in order to achieve stabilization by January of 1975. All activities, products, successes, and failures of the program from January 1, 1975 to the end of the research and development phase of the program are the object of summative evaluation.

Phase IV: Summative evaluation. Having come this far, the standard against which all findings will be judged are the terminal objectives of the program. These are not necessarily the unit or course objectives or even student terminal performance objectives (STPOs) but rather the development of career skills and employability traits. Employer evaluations will be used at this point as will other evaluations. Information from "Internal Evaluation of Mountain-Plains Components: Volume II" (Mountain-Plains Proposal: R&D Completion, Volume I, pp. 183-184) will also be utilized. However, total program effect will be the main point of interest. Reports on individual components will be submitted in accordance with the guidelines contained in Volume I of the FY76 proposal (pp. 185-187). The methodology of evaluation of the various curriculum areas is contained in the method section of this report.

It is at the point of summative evaluation that the evaluation of program design by disinterested parties (Phase I) can be fully appreciated. If the progarm has been judged to be adequate by consensus of external raters, and if internal objectives are met, then it is highly probable that summative evaluation will be favorable. Failure to achieve favorable results under such circumstances would have implications not only for the program but for individualized instruction in career education as well. Assuming favorable conclusions as a result of Phase IV evaluation, cost/benefit analysis will be of increased relevance.

Phase V: Cost/benefit analysis. An interior cost benefit analysis has been conducted in which the Mountain-Plains program was seen in a favorable light. Further analysis of the economic nature of the program is underway in accordance with the design presented in Volume I of Mountain-Plains Proposal: FY76 R&D Completion, pp. 148-181, and will be reported in "Analysis of Economic Impact of Mountain-Plains Program" (due June 1, 1976).

Model summary. The compilation of evaluative data in an orderly, comprehensive, sequential fashion will result in an extremely useful and powerful document. Should oncenter continuation funding be received, a thorough documentation of the program rationale will exist for future instructors and administrators. Evidence of the viability of individual components will have great management implications. In the event of program phase-out, proof of the value of a Career Education Model IV will exist for potential users of Mountain-Plains products.

Method

The focal point of all internal evaluation for FY76 is student mastery of program objectives. This evaluation will be summative in nature and will stand as the last word on the internal success or failure of Mountain-Plains during its research and development phase. Therefore, the methods of evaluation must themselves be subjected to careful analysis to insure objective and accurate appraisals of program success. The primary objects of this scrutiny are the Mountain-Plains-developed tests and student evaluation questionnaires. This research will include assessment of test realiability, content validity, discriminant validity, and validity of student evaluations of curriculum and staff.

Test reliability. Conventional estimates of reliability are inappropriate for criterion referenced tests (CRTs) for two reasons. Estimates developed for norm referenced tests (NRTs) assume internal consistency of test items and maximum variability of performance of examinees. The assumption of internal consistency is inappropriate for Mountain-Plains tests due to the fact that Mountain-Plains tests are criterion referenced and cover many objectives which are not necessarily statistically related (LAP tests are an exception because they cover only one objective). Although course mastery is dependent upon unit mastery, units within a single course need not correlate with one another in terms of mastery. The assumption of score variability is violated by the very nature of individualized competency-based instruction, the goal of which is to have every student achieve mastery.

A theory of realiability for CRTs exists but is still in its infancy. Earlier attempts to formulate a reliability coefficient for CRTs have been somewhat disappointing. However, some recent work on true score theory by Ronand Hambleton and his associates has improved the situation[5]. A reliability coefficient based on the advances made by Hambleton et al has been developed by the Mountain-Plains Tests & Measurement

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[5] R. K. Hambleton, H. Swaminathan, J. Algina, and D. Coulson, "Criterion-referenced testing and measurement: a review of technical issues and developments". Symposium presented at the annual convention of the American Educational Research Association, Washington, D. C., April, 1975.

Specialist and will be used in estimating reliability (in this instance, decision making efficiency) of all cognitive course and unit tests.

In some instances, conventional reliability estimates are defensible. LAP tests are short tests over a single objective. For these tests it is logical to consider internal consistency since all items tap a common objective. To test the viability of this assumption, a program was developed to score LAP tests and to compute a coefficient of internal consistency. This program was applied to 20 LAP tests from Health Education. An acceptable level of reliability was set at .65. Only four tests failed to reach this objective. Upon examination it was discovered that one test covered two objectives (in some instances two LAPs will have a combined LAP test). Two tests had one or more faulty items, and only one test failed to achieve a reliability of .65 due to violation of distribution assumptions.

Content validity. The validity or relevance of Mountain-Plains curriculum content has already been commented on by third party contractors in a fairly general sense. A more detailed account of content validity will be available through the User Trial of Mountain-Plains Curriculum. Although the scope of the User Trial is much broader than content validation, the portion of the research design dealing with content validity will be briefly reiterated here. The complete research design is contained in User Trial Report #3.

Of the many forms created for User Trial, four in particular will be of interest. Responses to Forms CD-3, CD-4, CD-5, and CD-7 will be subjected to scaling analysis (based on the law of categorical judgement) to determine the number of dimensions of the products measured and to compute scores for each respondent on each dimension. These scores will be absolute in the sense that it will be possible to determine the quality of a single curriculum product by summing the responses of all individuals evaluating the product. It will also be possible to compare two or more curriculum products using these scores. Because there are many scales, rather than one, it will be possible to state that a given curriculum product is acceptable with respect to some criteria but unacceptable by other criteria. Forms CD-3, CD-4, CD-5, and CD-7 are included in Appendix A to illustrate the different criteria by which each curriculum product will be evaluated.

Discriminant validity. The major occupational goal of Mountain-Plains is to lead students, through individualized instruction, to mastery of job and career skills. To this end then, Mountain-Plains tests should discriminate between masters and non-masters. This is not discrimination in the sense of maximum score dispersion but rather the capability of the test to divide students into two highly distinguishable groups. Discriminability can be defined in three phases; viz, pretest/post-test differences, hierarchy validation, and contingency analysis. Each phase has evaluative implications either for curriculum or instruction. The pretest/post-test difference score (D_{pp}) is an index of the proportion of the students correctly answering an item after instruction minus the proportion of students correctly answering the same item before instruction. D_{pp} may vary from -1 for a very bad item to +1 for a very good item. Low values for a large number of items in a particular curriculum component might indicate that the objective for that component is not being properly addressed or that the content of the component is not relevant to many of the students.

D_{pp} values will be obtained through an item analysis computer program called MASTER. The primary function of the program is to perform contingency analyses for each item of a test. The program first checks each student's responses against keyed correct answers and assigns a total correct score. This score is then used to place the student into a mastery group or a non-mastery group based on a predetermined cut-off score (80% correct for most Mountain-Plains tests). Two chi-square goodness of fit analyses are performed for each item; one to determine how few non-masters answered the item correctly and one to determine how many masters answered the item correctly. A chi-square contingency analysis is performed for the entire group of examinees for each item to determine the relationship between overall mastery and mastery of one item. On this last analysis, the number and percent of examinees answering the item correctly are given. By performing this analysis for both pretests and post-tests, the evaluator simply has to subtract the pretest percentage from the post-test percentage to obtain D_{pp}.

The concept of D_{pp} can be expanded to deal with whole tests rather than single items. The average percent correct on a pretest for an entire group of examinees can be subtracted from the average post test score and divided by the number of items to derive a D_{pp} index for a LAP, unit, or course test. Information for this type of analysis is directly obtainable from student progress records (SPRs).

Knowledge of relationships between items and total tests is only the beginning, for Mountain-Plains is not primarily concerned with cognitive tests. The major point of emphasis in the testing program is performance. The entire Mountain-Plains curriculum contains approximately 400 performance tests. These range from cooking eggs to building houses.

The program MASTER, previously discussed, has the capacity to treat these performance activities as an extra item on a unit test (performance tests are usually administered immediately after a student completes a unit, at which time he also takes a unit cognitive post-test). Treating the performance task in this manner, MASTER computes a contingency coefficient which shows the relationship between mastery as measured by the cognitive test and as measured by actual performance. In all cases, non-cognitive performance will constitute prima facie evidence of mastery or non-mastery.

A higher order of contingency analysis is hierarchy validation. The logic of individualized instruction is such that complex skills are mastered as a result of mastery of simpler skills. Progress through a course of individualized instruction if from the simplest possible task to more complex, either in a linear or branched fashion. Hierarchy validation is an assessment of the extent to which this line of reasoning applies to a particular component. Relationships within a hierarchy will be found by contingency analysis of information contained in SPRs. Consider the following example:

Course 01

Unit 01.01	Unit 01. 02	Unit 01. 03	Unit 01. 04
-LAP 01.01.01	-LAP 01.02.01	-LAP 01.03.01	-LAP 01.04.01
-LAP 01.01.02	-LAP 01.02.02	-LAP 01.03.02	-LAP 01.04.02
-LAP 01.01.03	-LAP 01.02.03		-LAP 01.04.03
-LAP 01.01.04			-LAP 01.04.04

Mastery of LAPs 01.01.01, 01.01.02, 01.01.03, and 01.01.04 should lead to mastery of Unit 01.01. Similarly, mastery of Units 01.01, 01.02, 01.03, and 01.04 should lead to mastery of course 01. In those instances where large numbers of students demonstrate non-mastery of a LAP, for example, and mastery of the Unit which contains the LAP, it will be concluded that the LAP is out of place and does not lead to mastery of the larger objective. By using the SPRs of all students who take Course 01 it will be possible to construct fourfold tables for every relationship in the course. The phi coefficients computed from these tables will represent these relationships. It will even be possible to determine indirect relationships between LAPs and courses by multiplying the phi coefficient between LAP and Unit by the phi coefficient between Unit and Course.

Mastery and employer evaluations. As noted in a previous section, performance on non-cognitive, "hands-on" activities constitutes *prima facie* evidence of mastery for the purpose of internal evaluation. However, the ultimate assessment of mastery is an employer's assessment of the competence of an employee trained at Mountain-Plains. These evaluations will constitute the ultimate criteria against which all tests and performance activities will be judged.

Pollack and Myers (Employer Evaluation of Mountain-Plains Students, April, 1975) have developed forms and data collection procedures necessary for obtaining employer evaluations. Using these evaluations as ultimate criteria, it will be possible to determine not only the validity of cognitive tests but of performance tests as well.

Employer evaluations will also serve a more comprehensive function than will performance tests in that employers will be asked to comment on competence, work habits, attitudes, and other traits relating more to employability than to mere technical proficiency. Effects of Counseling, Career Guidance, Occupational Preparation, and placement efforts will be assessed in this manner.

Mastery and entry variables. One of the questions to be addressed in FY76 is "For whom is the program successful?" The answer to this question will greatly affect the transportability of Mountain-Plains products and processes to other sites and other student populations. The method for answering this question involves determining the extent to which characteristics of entering students systematically affect their chances for mastery of program objectives. The problem will be to determine whether or not there are identifiable subgroups of students with similar aptitudes, interests, and values. The technique will be subgroup analysis.

Three standardized tests are used to assess student aptitudes, interests, and values. The General Aptitude Test Battery (GATB) yields scores on two aptitude dimensions. The Ohio Vocational Interest Survey (OVIS) measures five dimensions of occupational interest, and the Minnesota Importance Questionnaire (MIQ) yields scores on two dimensions of students' values. The subgrouping procedure uses these nine scores for each individual to plot the individual's position in a nine-dimensional space. Individuals who are close to one another in this space are grouped together. The end result is a set of subgroups based on the nine dimensions of interest. Individulas in any subgroup tend to be very similar to other members of their subgroup in terms of aptitudes, interests, and values and very dissimilar to all other individuals. One immediate advantage of this procedure is that it will be possible to identify subgroups of students who tend to be very successful or very unsuccessful no matter which component of the program they encounter. Evaluations of program components serving large numbers of such students may be revised accordingly. For example, suppose a group of students was identified all of whose members performed uniformly unsatisfactorily in Family Core Curriculum, Foundation Education, World of Work, and were all poor counseling risks. Suppose further that a disproportionate number of these students elected to receive training in Marketing and Distribution. The inevitable result would be an overall poor showing by Marketing and Distribution. The effectiveness of that curriculum area in dealing with students in general would be underestimated unless allowances were made for the presence of an unusual number of high risk students. In order to avoid such situations, final evaluations for each program component will be broken down from overall effect for all students into effects for each subgroup.

Student evaluations of curriculum and staff. Evaluation questionnaires have been developed to elicit student opinions about instructors, counselors, career guidance specialists, state coordinators, and curriculum materials and procedures. Reliabilities have been determined for each of these questionnaires and generally range in the low .90's. The primary focus for FY76 will be the validity of these questionnaires with respect to student performance. Student evaluations of curriculum materials and procedures will also be compared to User Trial student evaluations of curricula. Variations from subgroup to subgroup (as defined above) with respect to evaluation of a particular curriculum area or staff member will also be noted.

Reporting format. Summative evaluation reports will be divided into sections by curriculum area. Within each section, the following format will be used for Occupational Preparation areas:

- Summary of objectives
- Summary of characteristics of entering students, including subgroup membership
- Reliability of area tests
  - LAP
  - Unit
  - Course
- Validity of area tests
  - LAP
  - Unit
  - Course
- Student evaluations of curriculum
- User Trial evaluations of curriculum
- Student evaluations of staff
- Employer evaluations of exited students
- Student gains on cognitive course tests/change analysis
- Summative implications
  - Summative evaluations
  - Career Guidance implications
  - Curriculum change implications

The format for nonoccupational areas (FCC and Foundation Education) will be as follows:

- Summary of objectives
- Summary of processes
- Reliability and validity of area tests
- Student evaluations of staff
- Change analysis
- Summative implications

An introductory section will explain the subgrouping procedure and describe each GATB/OVIS/MIQ subgroup. A summary table of subgroup comparisons will be prepared. A summary section will deal with overall implications of results. Total number of program misfits (i.e., students whose aptitudes, interests, and/or values are inappropriate to their chosen occupational preparation) will be reported with suggestions for program change. Evaluations from students, users, and employers will be summed across all areas and reported as an overall program evaluation weighing total positive responses to total negative responses. Total program success will be based on typical test validities, evaluations, and changes in student performance and employability.

Summary

Internal evaluation of Mountain-Plains has been a continuous process, beginning with program design and continuing throughout the life of the program. The purpose of evaluation during FY76 will be to assess the internal success of a fully developed and stabilized program. Success is to be measured in terms of student achievement of specific goals and evidence of quality and transportability of curriculum products developed during the research and development stage of the program. The stakes of such assessment are understandably quite high; therefore, the instruments and methods by which success is measured must also undergo intensive scrutiny. Validation of Mountain-Plains tests is the primary focus of this scrutiny. The result of the processes described in the sections above will be an objective and accurate assessment of student mastery of program objectives and a thorough evaluation of the success of Mountain-Plains.

ECONOMIC IMPACT OF THE MOUNTAIN-PLAINS FAMILY EDUCATION EXPERIENCE

by

Stephen F. Seninger

and

Wayne Stevenson

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Introduction

One of the Mountain-Plains' objectives is to improve the socio-economic status of disadvantaged families located in a six state region. Program implementation toward that objective is achieved through resident family retraining consisting of a career development program, a family core curriculum, supportive social services, and ancillary counseling and placement activities. The following discussion will attempt to assess what impact these program activities have on the participant families' status.

Improved socio-economic status involves a broad spectrum of measures ranging from positive mobility in community class and status to intergenerational effects on educational achievement and to economic gains for the family unit. Economic gains can be disaggregated into a number of components such as the more obvious measures of increased earnings and reduced unemployment. Equally important are reduction in family dependence on welfare payments and increased tax payments to various government units. The following analysis develops a number of statistical measures and techniques to estimate these components of economic gain.

The quantitative investigation follows two general lines of inquiry. First, a profile of the salient demographic and social characteristics of both participant and control families is developed. That profile is generated by a variety of descriptive statistics which focus on a set of pre-center characteristics. Post-center levels of earnings, employment, and occupational status are computed as supplementary statistics to this profile.

A second line of inquiry emphasizes Mountain-Plains Program characteristics and their effect on earnings gains and transfer (welfare) payments received by participant and control families. Multiple regression techniques are used to measure Mountain-Plains Program impacts on family earnings gains while controlling for other characteristics. The use of multivariate analysis allows for an in depth study of the effect that certain personal and program characteristics have on program output. This is supplemented by an analysis of "program area of training" and post-center occupational status. Finally, all of this output is discussed and qualified in terms of the statistical sample and techniques.

The information and data in the preceding analysis is used to gain a broader, overall view of the Mountain-Plains Program, a view which is best described by a question posed in last year's Research and Development Proposal for fiscal year 1976: "To what extent do Mountain-Plains Program inputs generate output impacts which are a socially improved use of, or allocation of, human resources?" The conventional tool of social benefit-cost analysis is used to deal with this proposition. Social benefits are defined in terms of earnings and employment effects of Mountain-Plains retraining. These economic benefits are compared to the per family cost of retraining--a comparison which indicates the presence or lack of an economically efficient use of resources.

Transfer and tax implication of the social benefit measure are discussed as a supplement to the benefit-cost analysis. This discussion is followed by a summary focusing on the general patterns of Mountain-Plains Program impact.

Pre-Center Characteristics of Participant and Control Families

Evaluating the economic impact of the Mountain-Plains Program involves observing the pre-training economic experience of participating families in comparison to their experiences after leaving the program. All changes in the families' environment, however, cannot be attributed to the training received at Mountain-Plains. Most would have changed their situation even without the influence of participation in the program. Proper evaluation or measurement of benefits requires comparison to a similar group of non-participants.

One means of comparison would be to include a representative sample of Mountain-Plains families in a national sample of similar families. Observations made over time would then reveal economic impacts accruing to Mountain-Plains families vis-a-vis other families receiving no training or different kinds of training. Such data is rarely available for the evaluation of programs. Lacking such a national group for comparison, most evaluations rely on the use of a smaller control group carefully selected and observed along with participants. Such a control should be identical to the experimental families in every way possible with the exception of program participation. Their experiences thus serve as a base upon which to measure the impact of inputs such as training, education and less tangible aspects of program contact.

Consistent data is available for 85 families to serve as a control group for this study. They were selected along with those admitted to the program. Table 1 provides some insight into the characteristics of both the experimental and control families involved in this study. The measures

Table 1

Pre-center Characteristics of Mountain-Plains Participant Families and Control Families

Variable	Participants (n = 644)[1]		Controls (n = 85)[1]		t-value[2]
	Means*	Standard Deviation	Means*	Standard Deviation	
Number in Household	3.65	1.46	3.68	1.43	-0.20
Female HOH[3]	0.18	0.38	0.32	0.47	-1.80
Non-white HOH[3]	0.22	0.41	0.20	0.40	0.28
Education, HOH	10.58	1.75	10.77	1.63	-0.96
Age, HOH	27.47	8.40	27.20	6.90	0.34
Education, Spouse	10.71	1.73	10.63	1.47	0.40
Own House[3]	0.08	0.27	0.13	0.34	-1.13
Number of Rooms in House	4.26	1.70	4.31	1.84	-0.25
Own Car[3]	0.79	0.41	0.59	0.49	1.56
Family Earnings[4]	$ 3022	$ 2072	$ 2617	$ 1934	1.81
Earnings of HOH	$ 2884	$ 2078	$ 2673	$ 1993	0.63
Earnings of Spouse	$ 513	$ 1032	$ 275	$ 807	2.33
HOH Works full-time	0.87	0.34	0.77	0.42	1.22
Spouse Works Full-time	0.71	0.45	0.52	0.50	1.18
Occup. Status, HOH	25.49	18.72	27.74	20.36	-0.91
Occup. Status, Spouse	29.61	17.88	25.72	9.74	1.89

[1] Based on maximum valid responses to any questions.

[2] Based on actual number of valid responses.

[3] The mean indicates the proportion of all observations in indicated category.

[4] Includes earnirgs of head of household, spouse and any other family members.

*Note: The mean of a dichotomous variable is a proportion. Thus a mean of .18 for female HOH indicates that 18% of the families are female headed.

reported in this table represent only a portion of the data available through the Mountain-Plains Education and Development Program. Only those variables expected a-priori to be related to economic impact have been chosen for comparison. As is typical in such comparisons, Table 1 also gives t-values to aid in comparing the two groups. While these values do provide some guides as to where significant differences exist, they should be used only with great caution. Making statistical inferences involves satisfying some very stringent assumptions which certainly are not met in this analysis.[1]

It is revealed in Table 1 that the families analyzed in this study have an average of about 3½ members. About 20% are female headed households and roughly one-fifth of all household heads are non-white. The average age of household heads is between 27 and 28 years and most adult members have not completed high school prior to training. Heads of household (HOH) and spouses work at fairly low status jobs resulting in low earnings. Many work less than full-time and a very small proportion own or are buying the home in which they live. Comparison with a national sample shows them earning less than half the 1970 level for rural families of comparable size and with similar levels of education and age of adult members.[2]

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[1] One of the most important assumptions is the use of a random sample. The observations here certainly do not constitute a random sample of all Mountain-Plains or any other group of families. In fact, the sample is made up of a very biased group for whom fairly complete information is available. Whether other families have faked better or worse than this group is unknown.

[2] See U.S. Bureau of the Census, *Detailed Characteristics*, 1970 Census of Population, Washington, D.C., U.S. Government Printing Office, 1970.

Of importance to subsequent analysis are some differences between participant and control families. For example, while 18% of participant families are female headed, nearly a third of all control families are headed by women. Members of experimental families also seem to be considerably more stable in their work as demonstrated by a greater proportion with full-time work. Although not shown here, greater work stability is also shown in a number of other measures related to the type, duration and turnover of employment. For these and other reasons control families earn about 13% less at the outset of this study than those families about to enter the Mountain-Plains Program. Such differences must be controlled for in any assessment of benefits associated with program participation. This is done in the following sections which attempt to measure the economic impact of this program.

Economic Impact of Mountain-Plains

The benefits derived from participation in any vocational education and training program are varied. Effects such as increased wages, employability and occupational status are readily measurable. Others such as greater family stability or job satisfaction are more difficult to quantify. Some benefits such as greater awareness, sensitivity and overall well-being defy measurement. In this study only those changes which are most easily measured with the least subjectively will be considered. The task of describing less tangible results will be left to others—preferably the program participants themselves.

Table 2 shows pre- and post-center means of a number of variables for both control and experimental families. These figures demonstrate that post-center family earnings are over 92% greater than pre-center earnings and greatly exceed price and wage rate increases over the period.[1] The result is a much higher real family income and presumably a greatly improved standard of living.

The earnings gains enjoyed by Mountain-Plains families are the combined result of increases for heads of households, spouses and other family members. The earnings for household heads increased by nearly $1800 or 62% on the average. This has been accompanied by nearly a three-fold increase in the mean earnings of the spouse. Although not shown here, contributions of other family members have added about $50 annually to the typical family's earnings, increasing slightly over the period of analysis.

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[1] This was a period of rapid inflation but in no year did the rate of change in prices or wages exceed an annual rate of 12.5%.

Table 2

Some Pre-center and Post-center Comparisons

Variable Mean (M) *Standard Deviation (SD)* Number (n)

Variable								Post-Center Follow-up									
Participants (P) Control (C)		Pre-Center			6 months			12 months			18 months			24 months			Weighted
		M	*SD*	n	M	*SD*	n	M	*SD*	n	M	*SD*	n	M	*SD*	n	
Family Earnings	P	3022	*2072*	701	4799	*3186*	154	6535	*4842*	75	6375	*4389*	75	6730	*4182*	66	5815
	C	2618	*1934*	85	4204	*4153*	12	3137	*2827*	15	5054	*3492*	29	6941	*4353*	28	5219
HOH Earnings	P	2884	*2078*	570	3563	*2517*	148	5497	*4174*	70	5445	*3767*	71	5423	*3181*	63	4660
	C	2673	*1993*	68	3602	*3725*	12	3052	*2736*	15	4388	*2768*	28	5372	*3370*	28	4365
Spouse Earnings	P	513	*1032*	604	1186	*1772*	111	2042	*2256*	51	1372	*2223*	59	1604	*2236*	58	1469
	C	275	*807*	75	802	*1095*	9	320	*640*	4	1081	*2476*	21	1683	*1905*	70	1201
HOH Days Unemployed	P	147	*121*	621	92	*100*	134	54	*95*	64	40	*75*	62	58	*97*	59	68
	C	150	*120*	73	158	*119*	10	83	*137*	12	45	*85*	25	76	*106*	26	78
Spouse Days Unemployed	P	307	*106*	619	152	*126*	63	74	*107*	31	106	*125*	30	111	*132*	33	119
	C	336	*74*	76	251	*118*	7	242	—	1	92	*130*	7	84	*94*	15	130
HOH Occup. Status	P	25.48	*18.7*	648	39.50	*21.8*	134	45.17	*22.3*	64	36.19	*20.5*	62	39.62	*26.3*	60	40.02
	C	27.74	*20.4*	74	34.10	*15.3*	10	37.92	*20.5*	12	30.68	*11.7*	25	29.31	*19.5*	26	31.85
Spouse Occup. Status	P	29.61	*17.9*	340	37.83	*19.3*	65	39.39	*19.4*	31	36.40	*20.2*	30	42.00	*20.1*	34	38.75
	C	25.72	*9.7*	29	27.43	*14.5*	7	7.00	—	1	23.28	*21.0*	7	26.80	*16.1*	15	25.47
Transfer Payments	P	735	*1164*	592	1230	*1688*	157	728	*1578*	75	808	*1130*	75	920	*1374*	70	988
	C	711	*1003*	67	1152	*1098*	12	2012	*1660*	16	1264	*1788*	29	746	*820*	28	1218

The earnings gains experienced by these families are accompanied by and largely explained by the fact that primary earners—both heads of households and spouses—are employed in higher status and higher paid jobs. In addition, employment is far more stable with much shorter and less frequent periods of unemployment.

The substantial gains in real income shown here, however, seem less outstanding in comparison with the control group. In most cases the improvements are nearly matched by those of the families which did not participate in training and education. Thus the experimental families show little in the way of measurable benefits vis-a-vis the control families. Why both sets of families experienced such great improvement is still an open question. It may well be, as is often the case in such experimental programs, that considerable "creaming" has taken place in the selection of both groups. That is, the comparable experience of the control group suggests that there may be something in the selection process rather than in the Mountain-Plains experience which accounts for the earnings gains. Although clearly among the rural poor, those selected may have some characteristics or traits which would result in a substantial improvement in their economic situation with or without subsidized training. More would have to be known about the selection process before a definitive statement could be made on this issue.

Another important aspect of the economic impact of government sponsored programs is changes in receipts of public assistance or transfer payments. Due to lack of comparability between pre-center and post-center transfer payment categories, it is only possible to compare aggregate receipts. Included in these receipts are AFDC, food stamp subsidies, child care support, and other federal, state and local payments. These payments averaged $735 and $711 annually for experimental and control families, respectively, prior to contact with Mountain-Plains. Ordinarily one would expect these payments to decrease as family income increases. With the recession and persistent unemployment of the early 1970's, however, these payments increased even among experimental families whose incomes rose considerably. The increase was less, however, among Mountain-Plains families. Due to the lack of homogeneity with the control group, especially with respect to the proportion of female headed households, it is difficult to say whether this difference can properly be considered a program benefit. That is, the greater increase in public assistance receipts may not reflect what would have happened among experimental families in the absence of training.

Determinants of Earnings Gains

The information presented in the last section suggests that although matched by the control group, the mean earnings of families increased considerably over the period of analysis. A simple comparison of means, however, hides many interesting interrelationships which exist between the characteristics of families and the earnings gains they experience. Similarly, it is not possible on the basis of means to determine whether or not the type, duration or completion of training influences the family's economic success. In this section, multiple regression analysis is used in an attempt to determine the influence of some of these variables.

Table 3 gives the results of regressions of the change in family earnings and post-center transfer payments on a number of family and program characteristics. Table 4 gives similar results in which additional variables indicating the area of training and the completion status of participants are included. Again, one should be careful about using these results to make inferences about other programs or even other unrepresented Mountain-Plains families. In the discussion which follows, care is taken to treat these results as descriptive or relationships which exist among this particular set of families for which adequate information is available. There is no attempt to make inferences concerning other cohorts.

Among the families studied here there is considerable variance in earnings gains. For some the gains were negative, implying their annual earnings were less after training than before, while a few families showed gains in excess of $15,000. The first regression equation reported in Table 3 attempts to explain this variation. As is typical in studies of income differences, only about 15% of the variation in the dependent

Table 3

Regressions of Family Earnings Gains and Transfer Payment Changes on Personal and Program Characteristics

Independent Variables	Dependent Variables			
	Family Earnings Gains		Post-center Transfers	
	Coefficients	t-values	Coefficients	t-values
Constant	-288.14	—	2962.68	—
Female HOH	-834.36	-1.42	203.58	0.93
Non-White HOH	-721.98	-1.38	-270.47	-1.37
Education of HOH	110.56	0.87	- 22.84	-0.47
Education of Spouse	- 28.93	-0.22	-108.79	-2.24
Age of HOH	8.31	0.27	29.23	2.52
Pre-Center Family Earnings	- 0.54	-4.77	- 0.18	-4.28
Length of Training (days)	7.28	4.03	- 1.60	-2.34
Months Since Exit	121.57	3.95	- 23.29	-2.00
Unemployment Rate[1]	1.13	0.85	- 1.94	-0.39
Control[2]	-269.73	-0.39	286.27	1.09
R^2	0.15		0.15	
adj. R^2	0.13		0.12	
F	5.99		5.68	
n	364		342	

[1] Unemployment rate at time of program exit.

[2] Dummy variable: equals 1 for control group.

Table 4

Effect of Completion Status and Area of Training on Earnings Gains

Independent Variables	Completion		Area		Combined	
	Coefficients	t-values	Coefficients	t-values	Coefficients	t-values
Constant	149.79	—	32.43	—	643.85	—
HOH & Spouse; JT[1]	1434.09	2.16			1420.18	2.12
HOH; JT & Spouse; FC[2]	775.30	1.00			764.64	0.98
HOH; JT & Spouse; NC[3]	746.11	0.93			868.58	1.07
HOH; Completer - No Spouse	780.78	0.73			1056.04	0.96
Office Education			242.54	0.25	- 25.65	-0.03
Lodging Services			- 265.02	-0.23	- 492.11	-0.43
Food Services			-1066.78	-0.76	-1241.37	-0.88
Marketing & Distributing			- 972.64	-0.71	-1229.06	-0.90
Automotive			158.37	0.18	- 29.05	-0.03
Building & Other Trades			621.59	0.72	405.22	0.47
Social Services			1694.48	1.43	1560.16	1.31
Other Characteristics[4]	**	**	**	**	**	**
R^2	0.16		0.17		0.18	
adj. R^2	0.13		0.12		0.13	
F	4.63		3.88		3.38	
n	364		364		364	

[1] Job Training completed [2] Family Core Curriculum only [3] Non-completer

[4] The set of family and program characteristics included in Table 3.

variable can be explained. Thus, the regression equation measures general trends but cannot be used to predict the success of any particular entrant to the program. To the extent that variations in family earnings gains can be explained, differences in pre-center earnings, length of time in the program and the number of months since leaving the program have the most significant effect. Pre-center earnings are inversely related to earnings gains. This is consistent with the notion that training of the disadvantaged serves to bring them up to the level of their peers. Those people with higher prior earnings have less far to go and gain less. It is an interesting finding that gains are directly related to both length of stay on the center and the number of months since leaving. The positive coefficient on months since exiting the program suggests that rather than deteriorating, as is often expected, the gains increase over time. The size of the coefficient suggests that this is more than just an inflationary increase. Similarly, the more contact the individual has with the program as measured by length of training the greater are the gains.

Although we are less certain of their numerical sign[1], the remaining regression coefficients reveal a number of interesting relationships. For example, gains are considerably less for female headed households as well as for families headed by a non-white. Older and more highly educated heads of households experience greater gains in the cohort. The dummy variable indicating control group status is negative suggesting that for this sample, after controlling for other differences, control group families gain less on an annual basis than experimental families. This is an important result because it accounts for some of the heterogeneity between the control and experimental families and suggests that there is a net gain for Mountain-Plains participating families.

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[1] When proper assumptions are met the t-values indicate the probability with which we reject the hypothesis that the true coefficient is zero or of opposite sign. In giving the regression equation a more descriptive interpretation, low t-values simply imply more variability in the value of the coefficient and less certainty in the relationship being measured.

The second regression equation reported in Table 3 shows that, as with earnings gains, only about 15% of the variation in post-center transfer payments can be explained. Notice, however, that among these families female headed households receive greater transfers. Similarly, non-white families receive smaller transfers after controlling for other differences. And, the control group is receiving more than similar non-control group families. This result is consistent with the earlier interpretation of Table 2.

Table 4 expands this analysis by adding variables for the type of training and completion status to the earnings gains equation. This is done by including a series of dummy variables for completion status. The first takes the value 1 for families in which both the head and spouse complete job training (27% of all families). The second isolates those families in which the head finished job training and the spouse only the family core curriculum (14%). The third category consists of those families for which the spouse is a non-completer (10%), and the fourth is made up of those families in which there is no spouse—primarily female headed families (13%). The omitted category is non-completers and controls (36%). Thus the regression coefficient indicates earnings gains relative to the omitted group after controlling for other variables in the equation.

Interpreting these coefficients we see that the most successful group of families—those in which both primary workers complete job training—

gain about $1400 per year more than similar non-completers and controls. Although total program benefits per family must include all families, this figure provides an estimate of net economic benefits for this group of families. Somewhat smaller net gains of between $700 and $800 per year are measured for other groups of completers.

A second group of dummy variables indicating the area of training received by the head of participating households is also introduced into some regressions. The omitted category is the completion of the family core curriculum only. It can be seen that gains are greatest among those receiving training in social services and trades. Post-center earnings performance has been the worst among those receiving training in the areas of food services, marketing and distribution. A high frequency of missing observations on these variables, however, makes these results somewhat questionable.

Unfortunately, the regression results discussed in this and the preceding section are based on a rather small and biased sample. Enlargement of the data base and elimination of missing values would greatly improve the reliability of these estimates. Continued data collection as the program progresses ought to provide more conclusive results in the future.

Area of Training as Related to Post-Center Employment and Earnings

The exact mechanism by which vocational training raises earnings is unknown. It is generally assumed, however, that through training certain skills are learned. If employment can then be found in which these skills are used, greater production and earnings should result. We have already seen that training in certain areas leads to greater earnings gains than training in other areas. It would be of interest to know whether or not these are the areas in which trainees are most successfully placed in their area of training. Although data concerning post-center employment is not complete, it is the purpose of this section to compare the area of training to the area of post-center employment for household heads.

The 642 family heads analyzed in this study have received training in the following areas: office education (17%), lodging services (6%), food services (3%), marketing and distribution (4%), automotive (23%), building and other trades (33%), social services (6%), and core curriculum (8%). Of these the curriculum area of their post-center employment is known for only 126. Table 5 gives a cross-tabulation of these indivuduals by area of employment and area of training.

It seems from these results that placement efforts are quite successful with two-thirds of all the individuals represented being placed in their area of training. Of those trained in building and other trades, 84% are working in their area of training. This is interesting in light of earlier results which showed the greatest earnings gains to be among this group. Lowest retention is in the areas of lodging services and marketing and in both areas, earnings gains are also relatively low. Although based on a

Table 5

Area of Training and Area of Post-Center Employment

Area of Training	Area of Employment							
	Office Education	Lodging Services	Food Services	Mkt'g & Dist.	Auto	Building Trades	Social Services	Total
Office Education	22	0	0	1	2	3	2	30
Lodging Services	3	3	1	0	0	3	1	11
Food Services	0	0	2	0	0	0	0	2
Marketing and Distributing	1	0	1	1	0	2	0	5
Automotive	0	0	2	0	16	8	1	27
Building Trades	1	0	1	3	2	37	0	44
Social Services	2	0	0	1	0	1	3	7
Total	29	3	7	6	20	54	7	126

very small and biased sample, these results point to some relationships between family earnings gains and the probability of successfully placing trainees in jobs related to their training.

To pursue this line of reasoning a bit further, the earnings gains of a very select group of families in which the head of the household is employed in the area in which training was received is analyzed. Mean earnings gains for this cohort are over $3100. This is considerably greater than the annual family earnings gains of $2600 for all Mountain-Plains and control families. A similar comparison of earnings gains for families in which both the head of household and spouse have completed job training shows an even greater increment of $3350. These findings suggest that improving the rate of completion of job training and increasing the probability of placement in the area of training would greatly improve the economic benefits of the program. In the next sections a more thorough analysis of these benefits in relation to program costs is carried out. Only then will it be known under what conditions these observed gains will be cost beneficial.

Benefit-Cost Analysis

A major and unanswered question is whether the Mountain-Plains Program represents an economically efficient use of resources. Social benefit cost analysis is a widely accepted technique for analyzing this issue. The benefit side of the technique is based on the pattern of allocative shifts in resource (primarily labor) utilization which can be attributed to the effects of family retraining. Mountain-Plains retrains disadvantaged families with an aim toward post-center placement in more productive jobs. "More productive" essentially reduces to employment experience wherein the labor unit is contributing more output to regional and ultimately national product. A monetized measure of this effect is change or gain in family earnings—a dollar surrogate for productivity which is accurate only if one assumes an effective and competitive labor market. Effective labor market behavior should be manifested in both high wages (a productivity effect) and lower unemployment—two basic determinants of family earnings gains.

This rather static concept of gain can be extended beyond the immediate Head of Household (H.O.H.) and spouse experience to include gains realized by other family members. If Mountain-Plains training leads to a post-center earnings gain, one can argue that the accompanying higher standard of living will have positive intergenerational effects on other family members as they eventually enter the labor market. A comprehensive time horizon would specify and measure these intergenerational impacts. Unfortunately, the current data base does not allow for measurement of this phenomena—this discussion will focus on the earnings gain of the immediate H.O.H. and spouse after the program completion.

The social benefit-cost framework outlined above refers to gains which accrue to society as a whole irrespective of distributional consideration. This is in contrast to other approaches such as individual benefit-cost and government benefit-cost calculations. The latter approach views economic benefits as accruing to a relevant government budget—benefits are defined to include decreased transfer payments, increased tax revenue, as well as the dollar value of family earnings gain. The present framework of social benefits and costs precludes inclusion of transfer payment and tax revenue effects.

Intra-Program Earnings Gains

An ideal measure of earnings gain should be based on post-center income levels of participant and control families. The latter group does not participate in the program but does go through some kind of labor market experience. Beginning with the pre-center origin participant families branch into Mountain-Plains while the control group maintains some form of labor market participation. Mountain-Plains families are placed in the labor market upon completion after which any advantages from retraining should begin to emerge in the form of a positive earnings differential over control families. The time period for tracking this effect begins with a six-month follow-up and continues with twelve-, eighteen-, and twenty-four-month observations.

One attempt at specifying this differential effect was the "control" dummy used as an independent variable in the family earnings gain regression on program characteristics (see Table 3). As reported earlier, the coefficient on this variable was not statistically significant—hence it could not be used as a measure of the participant/control differential.

An alternative measure is the difference in family earnings gains. Differences for participant and control families (see Table 2) indicate a small differential of approximately $200 for participant over control families. However, these mean values are not adjusted for differences between Mountain-Plains and control family characteristics and, as discussed above, there is evidence suggestive of heterogeneity between the two groups.

A third approach is, however, possible. While most families do not show earnings gains statistically significantly greater than control families, one interesting result does emerge. Those families in which both the head of the house and the spouse have completed job training show gains of $1434 (significant at the 5% level) over and above those of the control group families and non-completers. If we restrict analysis of benefits to this most successful group of families, this value will provide the best estimate of earnings gains.

This gain was projected over ten, fifteen, and twenty year time periods; each of these earning time streams were discounted at interest rates ranging from a low of six percent to a high of fifteen percent. Table 6 contains the discounted present value of Mountain-Plains family earnings gain for various combinations of time periods and interest rates.

Three qualifications on the data in Table 6 should be made. First, the data base on which the point estimate of earnings gain is predicated is strictly a short-run time period base--six and twelve month follow-up along with a limited number of eighteen and twenty-four month observations. Projecting these gains over time horizons as long as twenty years is a

Table 6

Discounted Present Values of Mountain Plains
Family Earnings Gains*

Number of Years	Interest Rate in Discount Factor					
	6%	8%	10%	12%	14%	15%
10 years	10,553	9,554	8,810	8,104	7,481	7,197
15 years	13,926	12,272	10,906	9,768	8,810	8,386
20 years	16,447	14,077	12,209	10,713	9,502	8,977

*Projections are not adjusted for inflation and use post-center differences between completer and control groups.

somewhat tenuous exercise. Second, the earnings gain coefficient of $1,434 is not as "clean" as initially planned since it includes both non-completer and control families.[1] The latter group is the more relevant basis of comparison for participant families. Third, the earnings gain pertains to families in which both the H.O.H. and the spouse complete not only the family core curriculum but also the area of training component. So we are definitely dealing with the highest level of completion success possible.

Costs of Retraining

The major components of Mountain-Plains' overall cost include the opportunity cost of program participation, capital costs of the Glasgow training center, and on-center operating costs. Opportunity costs consist of the dollar value of output which is foregone due to removal of participants from gainful employment. This cost item is assumed to be zero in view of the substantial, average unemployment rate for pre-center families (see Table 2). Capital costs for Mountain-Plains are largely contained in the plant and equipment represented by a deactivated Air Force Base. The alternative use of these fixed resources is, by and large, zero—hence capital costs are not included as part of total cost.

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[1] Both groups of families are included as reference groups because of the manner in which the data is coded. The value of $1434 is considered to be quite accurate, however, as the difference between non-completers and controls is not statistically significant.

On-center operating costs represent the major item in terms of resource inputs to the program. This breaks down into direct student support, recruiting and placement, instructional costs, and administrative overhead. Research and Development expenditures are netted out of these operating costs due to the experimental nature of the program. Table 7 contains the cost data provided by the Mountain-Plains staff.

Table 7

On-Center Operating Costs for Participant Families

	Net Costs Excluding Research and Development			
Quarter Ending	Average Number of Family Months	Average Total Cost Per Quarter	Average Length of Stay-Completions	Average Cost Per Family Month
December 31, 1974	591	$1,067,162	6.4	$1806
March 31, 1975	561	$ 972,635	6.9	$1734
June 30, 1975	549	$ 933,193	7.4	$1700
September 30, 1975	538	$ 963,015	7.0	$1790
December 31, 1975	579	$ 931,785	6.7	$1609

Operating costs per family were derived by multiplying "average length of stay" times "average cost per family month." This was computed for each of the five quarters and averaged out to a cost per family of $11,882. This represents a cost figure for a given level of program operation—it would not be appropriate to use this in an incremental context unless rather strict assumptions of linear homogeneity are imposed.

Intra-Program Benefit-Cost Ratios

Earnings gains as economic benefits (see Table 6) are compared to the cost of retraining by computing social benefit-cost ratios. Table 8 shows the value of these ratios for various time period and interest rate combinations.

Table 8

Social Benefit-Cost Ratios for Mountain-Plains Retraining*

	Interest Rate in Discount Factor					
Number of Years	6%	8%	10%	12%	14%	15%
10 years	.88	.83	.74	.68	.63	.60
15 years	1.17	1.03	.92	.82	.74	.70
20 years	1.38	1.18	1.03	.90	.80	.75

*Benefits based on post-center differences between completer and control groups.

Ratios above 1.00 in Table 8 indicate that the Mountain-Plains Program is an efficient use of resources while ratios below 1.00 suggest a non-efficient use of resources. Three out of the fifteen combinations have ratios slightly above 1.00. But these favorable cases hold only for either a low interest rate (8%) or a rather long pay-out period (15 and 20 years). If higher interest rates and shorter projection periods are accepted as the relevant combinations, it appears that the Mountain-Plains Program fails the benefit-cost test.

Yet this is only one measure of performance-benefit-cost ratios pertain to the somewhat narrow perspective of economic efficiency and while a ratio less than one represents failure from this perspective, it does not represent a singular lack of positive impacts and gains. Indeed, as discussed earlier, Mountain-Plains families do experience positive gains in family earnings and employment. In fact the pattern suggests greater economic stability for Mountain-Plains families, a program impact which should be ranked along side of economic efficiency consideration. Furthermore, the statistical output suggests positive distributional changes on participant family income. There is evidence which suggests that families in the lower end of the income distribution prior to Mountain-Plains are pulled up as a result of the program.

Inter-Program Benefit-Cost Analysis

The preceding analysis focused on the economic efficiency of Mountain-Plains in terms of participant versus control families. And in fact this outcome measure was strictly in terms of Mountain-Plains activities in isolation from alternative programs. A number of adjustments and qualifications are necessary in order to compare Mountain-Plains with alternative programs.

One necessary condition for inter-program comparisons is homogeneity with respect to critical program features over the comparison set. Quite simply, Mountain-Plains should be compared to programs which are similar in nature. As a practical reality, other programs will probably differ in terms of inputs, the transformation process, and outputs generated - thus it will be difficult to control for this variation.

A second, more tractable qualification is the measure of program outcome or family earnings gains in the present context. Many other programs do not follow a participant/control group procedure like Mountain-Plains. As a result other programs often measure earnings gains for participants by computing a pre/post earnings differential for program completers. A similar earnings gain measure for Mountain-Plains is necessary in order to compare social benefits and costs of Mountain-Plains with other programs.

Pre-center mean family earnings was $3022 for participant families (see Table 2). This generated a family earnings differential of $2793 per year when compared to the weighted post-center mean of $5815 for participants, a gain which can be used in the present context as a measure of social benefit.

Projecting this gain over various time horizons yields a predicted time stream of benefits. These benefit streams are discounted at rates ranging from a low of 6 percent to a high of 15 percent resulting in the discounted present value of Mountain-Plains family earnings gains contained in Table 9.

The appropriate value for a policy decision-maker depends on the degree of accuracy desired. A shorter, ten year period is more reliable if little is known about the long run performance of earnings gains. In fact the short-run point estimates which form the basis for the current prediction prohibit any strong reliance on the 15 and 20 year projections.

An "appropriate" rate of discount is again left to the policy decision-maker. The use of 12 percent versus 10 percent versus 6 percent depends on what guidelines are operative on the agency or on what the consensus is on a "reasonable rate" (a 3 percent rate was not included in the present study in view of the rather high interest rates which have persisted in the economy over the past three years).

Table 9

Discounted Present Values of Mountain-Plains Family Earnings Gain*

Number of Years	Interest Rate in Discount Factor					
	6%	8%	10%	12%	14%	15%
10 years	20,554	18,738	17,160	15,783	14,571	14,018
15 years	27,123	23,902	21,241	19,026	17,160	16,333
20 years	32,033	27,419	23,780	20,857	18,506	17,484

* Based on pre/post differentials for completers.

With these caveats in mind the discounted present values can be compared to the per family cost figure of $11,882 (see above). The resultant benefit cost ratios are shown in Table 10.

Table 10

Social Benefit-Cost Ratios for Mountain-Plains Participant Familes*

	Interest Rate in Discount Factor					
Number of Years	6%	8%	10%	12%	14%	15%
10 years	1.73	1.58	1.44	1.32	1.22	1.18
15 years	2.28	2.01	1.78	1.60	1.44	1.44
20 years	2.69	2.30	2.00	1.75	1.55	1.47

* Based on pre/post differentials for completer.

All of these ratios are greater than one and for combinations of long time horizons and low discount rates the ratio exceeds two. It is impossible to interpret these ratios as indicative of economic efficiency. The only way these ratios can be used for such evaluative purposes is to compare them to ratios for other family education programs. In designing such a comparison Mountain-Plains would be ranked high or low in accordance with benefit/cost ratios for the alternative programs. Clearly, Mountain-Plains' position in the rank ordering would give some insight to the relative economic efficiency of the Mountain-Plains operation. Moreover the tradeoff between Mountain-Plains and competitive programs would have to be cast in terms of the budget available for carrying out family education activities. The critical cutoff value for a social benefit/cost ratio (at least for ratios greater than unity) would depend on the rank ordering vis-a-vis the magnitude of the budget constraint.

One final interpretation of the above data is the social payback period. Social payback is the number of years which social benefits must accrue in order to recoup the cost outlay per family. Mathematically this is measured by dividing the cost figure by the annual benefit figure. Annual family benefits of $12,793 divided into a per family cost figure of $11,882 yields a social payback period of 4.25 years (this compares to a previous value of 5.5 years in the analysis conducted in July, 1974).

Tax Revenue and Transfer Payment Impacts

The previous benefit-cost analysis emphasized economic efficiency in terms of society at large. This limited efficiency perspective was predicated solely on family earnings gains. One might argue that there are additional benefits which accrue to government units. Increased family earnings should result in higher tax payments to local, state, and federal government levels. These revenue inflows expand the respective budgets and allow for either new programs, lower taxes, or some mixture of the two. In addition, higher family earnings may result in reduced family dependence on transfer payments. This would be an expenditure saving to the government level involved.

These two kinds of government benefits did not appear to be significant in the case of Mountain-Plains participant families. Rough estimates on increased tax payments for a family of four were generated using a pre-center earnings level of $3022 and a weighted post-center mean of $5067 (see Table 2). State income tax payments were computed for 1975 based on this representative gain. Most of the state tax increases were small ranging from a low of $7 per family in North Dakota to a high of $77 in Montana (these estimates were $64 and $12 in Idaho and Nebraska, respectively—the other two states do not have income taxes)[1] This averaged out to $40 per family over the four state region. Federal income tax payments for a typical Mountain-Plains family increased by $102 for calendar year 1975.

These calculations do indicate positive revenue effects although the orders of magnitude are low. These low values were mainly due to (a) low pre-center earnings on which virtually no taxes were paid and (b) family exemption adjusted post-center earnings which lead to low revenue payments.

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[1] No attempt was made to estimate tax revenues for other categories such as sales and property taxes.

Moreover, calculation of increased tax revenue necessitates inclusion of changes in transfer payments. The actual value of the latter was positive (see Table 2) and greater than the average revenue gain of $142 per family. Post-center transfer payments had a weighted mean value of $988 for Mountain-Plains families representing a gain of $253. This more than offsets any positive revenue effect.

The positive change in transfer payments was not totally unexpected. Completer families may very well rely on some kind of welfare payment or they make a short-run adjustment during the program exit/placement transition. Moreover, if the labor markets which they are entering are characterized by either recession or immediate post-recession conditions, this will surely impede reductions in welfare dependency. In fact, Mountain-Plains is responsible for family retraining and not for regional labor market conditions. The latter is within the province of policy makers at the national level which clearly puts cyclical fluctuation in labor markets beyond the realm of Mountain-Plains Program activity.

Summary

This study has identified a number of positive, economic impacts generated by Mountain-Plains retraining. Participant families experience considerable earnings gains after controlling for other factors. Unemployment levels decrease rather dramatically for both participant H.O.H. and spouse. These positive attributes seem to show a consistent pattern both for the Mountain-Plains group by itself and also when compared to a control group of families.

Mountain-Plains families do experience greater economic stability after the program, an effect with attributes over and above earnings gains. Furthermore, this stability is achieved through meaningful employment in the market place. Disadvantaged families are made better off through work and not through continued dependence on public welfare programs.

A REGIONAL PROGRAM IN
COMPREHENSIVE FAMILY EDUCATION

EMPLOYER EVALUATION OF EXITED MOUNTAIN-PLAINS STUDENTS

JULY 1976

BOX 3078 GLASGOW AFB, MONTANA 59231

MOUNTAIN-PLAINS EDUCATION ECONOMIC DEVELOPMENT PROGRAM INC.

INTRODUCTION TO THE EXTERNAL EVALUATION REPORT SERIES

Mountain-Plains Research is divided into three broad areas with overlap. These areas are: 1) External Evaluation, 2) Instructional/Curriculum Evaluation, and 3) Affective Evaluation. Each of these areas is further subdivided as the logic of the research tasks within each dictates.

This document is one report in the series "External Evaluation Reports". The six major series of reports in this research area include:

1. Selected Pre-Center Reports
2. Mountain-Plains Placement Reports
3. Summary of Occupation Placement Reports
4. Cost Benefit Reports
5. Case Study Reports
6. Employer Evaluation of Curriculum

Individual reports in each series are currently available from, or in the process of being incorporated into, the ERIC system. By the conclusion of the NIE research cycle, External Evaluation Reports will number well over 50. Many reports with external content and importance are not catalogued under any of the external report series. Reports which are interactive efforts of various research areas are typically produced independently by title, or if extensive, constitute a report series in and of themselves. The internal evaluation of curriculum is an example of the latter case.

The reader of individual Mountain-Plains documents should keep in mind that a report takes on full significance only in relation to its report series and the overall research program, and that the reader typically finds frequent reference to earlier reports. While each report is designed to have independent value, such "series dependence" is an inescapable aspect of any systematic program of research, and requires some indulgence on the part of the reader.

EMPLOYER EVALUATION OF EXITED MOUNTAIN-PLAINS STUDENTS

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July 1976

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EMPLOYER EVALUATIONS OF EXITED MOUNTAIN-PLAINS STUDENTS

INTRODUCTION

The purpose of the present report is to provide, in summative fashion, information pertaining to the occupational skills and employability traits of exited Mountain-Plains students as perceived by employers. Much of the information contained in this report is summarized from previous reports (e.g., Myers, 1976). The major difference between this and previous reports, however, is the fact that implications of previous reports were formative rather than summative.

As noted previously (Bunch, 1975), employer evaluations of students/employees serve as ultimate criteria against which all other evaluations are validated. Employers have been asked to respond to questions regarding technical proficiency as well as employability. The concept of simultaneous development in these two areas is central to the Mountain-Plains philosophy. Employability is defined in terms of work attitude, attendance, industry, loyalty, etc. Mountain-Plains' position has historically been that these traits are as important as technical proficiency when the objectives are long-term employment, job satisfaction, and career mobility. This position has been ratified by employers in previous evaluations (cf. Myers, 1976; Pollack, 1975).

Technical proficiency is defined as mastery of a set of learning objectives. These objectives have been specified through task analysis and job market surveys. Each activity identified as a part of day-to-day functioning in a given position is included in Mountain-Plains curriculum. Mastery of this curriculum is demonstrated by passing written and performance tests.

While technical proficiency is strictly the province of occupational preparation (and Foundation Education, mathematics and verbal skills), employability is the shared responsibility of virtually every program staff person. Instructors, personal counselors, and advisors are charged with day-to-day monitoring of employability traits and feedback to the student. Career guidance specialists and Family Core Curriculum instructors have periodic opportunities to help students develop employability. Other staff are called upon in extraordinary circumstances through case conferences, team conferences, review boards, and specific, student family-related executive action.

METHOD

Only those stabilization population students[1] who completed training (by satisfying all requirements of the Student Work Plan) and were subsequently employed in their area of training were included in analysis. Thus, for example, a student completing as a Mid-Management Trainee would not be considered if he or she were employed as a Clerk-Typist or Restaurant Cook. For each qualified student/employee, an evaluation questionnaire was sent to the employer approximately three months after date of hire. By this method, 123 evaluations were mailed to employers. Employers were asked to respond to the types of questions mentioned previously and return the completed forms. Those employers who had not responded within three weeks were reminded of the importance of the questionnaire and again urged to respond. A third form was sent to those employers not responding to the first two mailouts.

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[1] The stabilization population consists of the 207 families entering the program between December 1, 1974 and July 31, 1975.

RESULTS

Total returns were 95, or 77.2% of the total mailout. Only 85 forms (68.3% of mailout) were usable, however. By curriculum area, usable returns were as follows:

Office Education	25
Food Services	5
Marketing & Distribution	10
Automotive	13
Small Engines	2
Carpentry	2
Electrical Wiring	5
Plumbing	4
Heating Systems	1
Refrigeration	3
Appliance Repair	2
Radio & TV Repair	8
Drafting	5
TOTAL	85

Results are presented by curriculum area in the following sections.

Office Education

A total of 25 usable evaluation forms were returned. All job titles within the Office Education curriculum area have been collapsed for the purpose of presentation. Responses to all items are summarized in Table 1.

Table 1
Summary of Office Education Evaluations

	Skills Not Required	Unobserved	Unsatisfactory	Satisfactory	Above Average	Superior
1. General bookkeeping skills.	8	5	1	8	2	0
2. Writing business letters.	16	3	2	2	1	1
3. Use of ten-key adding machines.	8	0	0	12	2	0
4. Use of printing calculators.	10	2	0	8	5	0

Table 1
Summary of Office Education Evaluations

	Skills Not Required	Unobserved	Unsatisfactory	Satisfactory	Above Average	Superior
5. Use of electronic calculators.	9	3	0	7	6	0
6. Filing.	3	0	2	11	6	2
7. Keypunching.	22	1	0	1	1	0
8. Use of full keyboard adding machines.	18	2	0	4	1	0
9. Use of shorthand.	17	4	2	1	1	0
10. Typing.	3	1	3	11	4	3
11. Transcribing from a dictaphone.	20	3	1	0	1	0
12. Use of postal services.	10	4	0	8	2	1
13. Use of telephone services.	6	1	1	14	1	2
14. Receptionist skills.	13	2	0	8	0	2
15. Ability to make travel arrangements.	18	5	0	1	0	1
16. Ability to prepare an itinerary.	18	6	0	0	1	0
17. Maintenance of clerical records (e.g., petty cash funds, etc.).	10	2	2	10	1	0
18. Knowledge of data processing equipment and systems.	15	6	0	3	1	0
19. Use of duplicating equipment -- a. Xerox	6	0	0	12	4	2
b. Mimeograph	18	2	0	1	0	0
c. Fluid duplicators	18	2	0	4	0	0
d. Thermofax	18	2	0	0	0	1
e. Stencils	18	1	0	2	0	0
f. Other	15	1	0	1	0	0
Total n	317	58	14	129	40	15
%	55.3	10.1	2.5	22.5	7.0	2.6

Table 1
Summary of Office Education Evaluations

	Skills Not Required	Unobserved	Unsatisfactory	Satisfactory	Above Average	Superior
20. Related Communication Skills.						
a. Dependability.	0	0	0	11	10	3
b. Loyalty.	0	0	1	10	9	4
c. Punctuality/Attendance.	0	0	2	12	8	3
d. Cooperation with fellow employees.	1	0	0	8	13	3
e. Cooperation with supervisors.	0	0	2	6	12	5
f. Pride in his/her work.	0	0	1	12	7	5
g. Industriousness.	0	0	1	13	8	3
Total n	1	0	7	72	67	26
%	0.6	0.0	4.1	41.6	38.7	15.0

Nearly two-thirds of all responses (65.4%) to technical proficiency items were coded either "Skills Not Required" or "Unobserved." Only 2.5% of all responses were "Unsatisfactory." Adjusted percentages, based on skills required and observed, are 7.1% "Unsatisfactory," while 92.9% are "Satisfactory" or better. A similar situation prevailed for employability traits. Out of 172 responses (excluding "Skills Not Required" and "Unobserved"), only seven (4.1%) were "Unsatisfactory," 95.9% were "Satisfactory" or better.

Judging from responses received, it is apparent that most Mountain-Plains students training in Office Education were employed as clerk typists. Shorthand, for example, was required and observed for only four people; only two used dictaphones. Secretarial services, such as composing business letters, making travel arrangements, and preparing itinerary, were seldom required. Xerox appears to be the only type of duplicating equipment on which employees are required to have any experience.

Evaluations were extremely favorable, generally. Over 90% of all technical points were rated as satisfactory or above, and over 95% of all employability traits were considered satisfactory or better. The following unedited comments (except for deletion of names) illustrate employer evaluation of Mountain-Plains trained employees.

1. The work in this office is very varied and so far she has not had the opportunity to display or use all of the programs or work that she has been trained for. She is a very conscientious worker, neat in appearance, pleasant personality, and congenial (which is very necessary, when there are a number of other workers and they are all much older than [she]).

2. We have found this person to be of good disposition, pleasant, etc., but her absenteeism was bad, her letter formation was bad, her typing was bad, her spelling was terrible and her hair grooming was not good. Shorthand was very bad. We dismissed her 2 weeks ago for reasons of the above. [She] requires considerable more training. She may also have personal problems etc., because she was generally tired on the days she was at work.

3. When [she] started she was absent for about two weeks. Her problem was understandable but at the same time she was absent too much. The last month that she was here her attendance was perfect.

4. Due to pregnancy, [she] is on "Leave of Absence." She is still learning, but her service has been satisfactory. A small amount of practical experience will round [her] out into a very capable secretary or "Girl Friday."

5. [Her] typing skills were slow. Also, the accuracy could have been much better. [She] could not take shorthand. Several letters were dictated to her at a very slow speed (approx. 40 wpm), but she was unable to remember the symbols, therefore, wrote some of the dictation in longhand. She had a problem in transcribing the dictation also. It was necessary for us to place [her] in a clerk-typist position rather than a clerk-steno position because of her lack of ability to take shorthand.

   Telephone skills are also checked unsatisfactory because she neglected to place the calling party on "hold" before she spoke about the call to someone else in the office. This happened several times. We received negative comments from persons she dealt with on the telephone.

   [She] was not receptive to supervision, and did not follow directions well.

   Skills such as typing, shorthand, and telephone are of greatest importance in the clerk-steno field. I feel that [she] should have had more practice in typing and shorthand. In addition, more time should have been spent on the proper manners to use on the telephone. Possibly part of the problem with the typing and shorthand was the two to three week interim between exiting and employment.

   Since it is apparent that office education students do not retain the speed and accuracy at which they validate their courses in typing and shorthand, perhaps the following questions should be studied:

   a. Should the rate of speed and accuracy for validation be raised?

   b. Should the students be required to validate speed and accuracy on several tests?

6. Letters and typing not satisfactory, cannot spell, and needs a great deal of training and practice on setting typewriter and completing neat work. She could not use a dictaphone as vocabulary was very limited and sentences did not have a meaning to her. She had trouble with Petty cash receipts-why? We didn't figure it out.

   During the 17 days she worked with us she was late twice and asked for time off (Doctor?) twice for one hour each.

   [She] started on February 17, 1975, and we terminated her on March 11, 1975.

7. [He] started work on 5-19-75. On 5-23-75, he was excused for 3½ hours to take his wife into the doctor, and to see the doctor himself as he said his wife had hepatitis. He called his supervisor the following Monday morning stating the doctor had advised him not to come to work until test results were back in Wednesday afternoon. He was told to be sure and call us after he knew the test results. Not hearing from him by Thursday, we attempted to reach him both Thursday and Friday to no avail. Friday early evening his brother contacted us saying [he] was moving to Denver as he and his wife were splitting up. Since [he] was only working one week, no job ratings are available.

8. [Her] performance has been "satisfactory." She is very conscientious about her work.

   I would suggest that in your courses you include a section which addresses the problems involved with the knowledge and use of English grammar. I have found that many adults forget what they learned in 5th grade English. Refresher courses in this area would benefit the employer (and employee).

9. [She] was a good employee however we made a placement error in putting her in the job we did. She did not seem to have the ability necessary to make quick accurate decisions concerning claims payments.

10. First of all, she is a very intelligent female. She has the potential to become a superior business person. At this stage of her life, she has the knowledge to function on an adequate basis with general office work including the more specific duties such as bookkeeping and secretarial work, however, these traits seem latent at this time for she does indeed have a few discrepancies that must be ironed out. To begin explaining the "unsatisfactorily marks," I start with the filing aspect. Our file system was set up well but after that she slacked off for awhile by not replenishing form letters and other general

filing duties that correspond. Her willingness to submit to authoritative figureheads definitely has to improve. We all have to take orders from somebody sometime and to recognize this fact, the idea of respect must be positively implemented with yourself and positioned power leaders. Following the Privacy Act of 1974 is of the utmost importance. She tends to forget. . . In terms of punctuality/attendance, she would have been fired on the spot had this particular organization been a partnership, corporation, or any other businesslike entity. I went easy on her but an intermittent objection was necessary sometimes. Since I was her direct supervisor, her only obligations to cooperate were to me. She insisted on being insubordinate. I tried to relay messages in a diplomatic order to properly administer the program. She seemed to have no pride in her work; and as for being industrious, her character does not reflect any steady effort or diligent behavior. At times when there was work (secretarial-bookkeeper) to be done, she procrastinated; and I had to carry the load. In conclusion, I firmly believe that she has the potential to be a superior business person, but her reservations about people have to be overcome. Her age is a predominant factor for she has to mature to a point where she can respect authority. I suggest that she take a course in Psychology or Instructional Change as these courses would define a set pattern for her to follow in future work related positions. I would probably hire her to work for me in the future, but a set of ground rules must be agreed upon orally and in writing. She must be taught to take orders in an unexploited and unmanipulated tone. There is nothing personal about this report. My views are based strictly upon her work performance and do not reflect any personal feelings. The 1975-76 TWEP project was administered as a separate entity being one of the few programs on the Blackfeet Indian Reservation to do so. I do believe that she and myself have no regrets.

11. She was a very fine employee--we were sorry to lose her at the conclusion of her training program (13 weeks under the CETA program) to a permanent appointment with the State of South Dakota as a Secretary I and is working for the Probation Officer in the Hot Spring area. She will have the opportunity in this new position, to use the secretarial skills for which she was trained under your program at Glasgow. We enjoyed having her in our office and feel she will be successful in her current position.

12. She has adjusted very well into our informal office setting. Since our office is a poverty law office, her empathy with low income people has been of invaluable assistance in conveying to our clients that we are here to help and not give them the "run-around" which they experience at many other social agencies. It might be valuable to include a question on future questionnaires as to what type of business the employer is engaged.

13. She did not remain in this office long enough to find out how well she might do a job. Two months is hardly long enough to evaluate an employee. I found her willing, quick, and really anxious to learn.

14. She is working in our Claim Department which includes typing claim drafts, indexing claim files, locating and attaching daily mail to claim files, and miscellaneous duties. She is now in the process of cross training in the areas of typing drafts and our daily closings. We have found her to be a very quick learning employee, very alert, and most efficient in all areas of her work, and, has also volunteered to work extra hours in our Steno Pool transcribing Statements. (This is not part of the Claim Department). We feel as though we were most fortunate to have her join our Company and consider her and her skills a most valuable part of our department.

15. She is currently working as a Sr. Stenographer. She did not score too well on the exam, but she may be able to qualify at a future date, high enough on the list for appointment. We are well-satisfied with her work in her present assignment.

Food Services

Evaluations received from five employers were used in the evaluation of Food Services. There were no "Unsatisfactory" ratings on any of the competencies, and only 14.7% of all responses to employability questions were in this category. Nearly two-thirds (65.7% adjusted) of all skill evaluations were "Above Average" or "Superior." Thus, skills are judged to be very good, while attitude is about average. Employer comments are listed below.

1. His duties as kitchen supervisor include: Supervising all kitchen activities, planning menus, ordering foods, cooking, and scheduling and supervising two cooks. There are two areas in which we feel he could use improvement. First, he could keep the kitchen area cleaner, and second, the menus need to include a more balanced, well-rounded diet. The food he prepares is very good, and he is conscientious in working within the limits of the budget. Also, he has taken the initiative in forming a boxing league here at the ranch on his own time. In summary, we are pleased with his work and his attitude and we enjoy having him on our staff.

2. Because of her job, she works close to teenage boys here at Sky Ranch for Boys. I think her problems lie in that she hasn't taken command of her kitchen. Not only preparing meals, but the supervision of the kitchen is a very important requirement. Her downfall at the present is not being able to handle situations that arise with boys in the kitchen. A lot depends on how she's feeling that day and by this, confuses the people she works with. I don't know about your program; but if I were to give a suggestion, I would stress the importance of complete control of the kitchen.

3. Started out feeling she would like to develop into supervisor and learn basic kitchen management procedures. When it became apparent that this would require effort and initiative on her part, she seemed uninterested in doing more than the necessary duties for just broiler cooking. In this she did a pretty fair job after 3½ to 4 months of training and a supervisor to work with her during peak times. She would panic if left on her own over any busy period. She had given a 2½ week notice of leaving; but when questioned about not having completed her assigned duties one day, she walked out before her shift started.

Marketing & Distribution

Ten usable evaluation forms were returned by employers of exited Marketing & Distribution students. The job titles Mid-Management Trainee, and Professional Salesperson are represented in the summary shown in Table 2.

Table 2
Summary of Marketing & Distribution Evaluations

	Skills Not Required	Unobserved	Unsatisfactory	Satisfactory	Above Average	Superior
1. Knowledge of the marketing process.	3	1	1	5	0	0
2. Knowledge of wholesalers and the wholesale process.	4	1	1	2	1	0
3. Knowledge of retailers and the retail process.	3	0	1	3	2	0
4. Processing of merchandise for shipment.	4	1	1	3	1	0
5. Receiving, checking and marking merchandise.	2	1	2	4	1	0
6. Stockkeeping.	2	0	1	5	1	0
7. Human relations skills.	0	0	1	3	5	0
8. Employer/employee relations.	0	0	1	5	4	0
9. Mathematical skills.	0	2	1	4	3	0
10. Cash register operation.	4	0	0	4	0	1
11. Design and construction of merchandise displays.	2	3	0	3	0	1
12. Selling abilities.	0	2	1	3	3	0
13. Knowledge of credit and collection policies and procedures.	4	1	1	3	0	0
14. Knowledge of customer services.	0	1	1	3	4	0

Table 2
Summary of Marketing & Distribution Evaluations

	Skills Not Required	Unobserved	Unsatisfactory	Satisfactory	Above Average	Superior
15. Sales presentations.	2	3	0	2	1	0
16. Selling techniques.	1	2	1	5	0	0
17. Sales management skills.	1	3	1	3	0	0
18. Preparation of advertising layouts.	4	2	0	3	0	0
19. Knowledge of sales promotions.	4	0	0	4	1	0
20. Purchasing.	4	1	1	2	1	0
21. Knowledge of business financial terms and procedures.	3	1	1	4	0	0
22. Inventory management skills.	3	3	1	2	0	0
23. Ability to train new employees.	4	1	1	1	2	0
24. Ability to solve problems in human relations.	1	1	1	3	3	0
25. Ability to minimize human relations problems and prevent them from occurring.	1	1	0	5	2	0
Total n	56	31	20	84	35	2
%	24.6	13.6	8.8	36.8	15.3	0.9
26. Related Communication Skills.						
a. Dependability.	0	0	2	3	3	2
b. Loyalty.	0	0	1	5	3	1
c. Punctuality/Attendance.	0	0	0	5	3	2
d. Cooperation with fellow employees.	0	0	1	5	2	2
e. Cooperation with supervisors.	0	0	1	4	3	2
f. Pride in his/her work.	0	0	2	4	2	2
g. Industriousness.	0	0	2	4	1	3
Total n	0	0	9	30	17	14
%	0.0	0.0	12.9	42.9	24.3	20.0

Virtually all competencies listed on the Marketing & Distribution evaluation form are regarded as essential by employers. Their responses indicate 85.8% "Satisfactory" or better ratings (discounting 87 responses in the "Skills Not Required" and "Unobserved" columns). Employability traits were rated equally high, 87.1% favorable or very favorable responses.

Four skill areas considered especially important were human relations, mathematics skill, selling ability, and customer service. Mountain-Plains generally excelled in human relations and customer service as well as cash register operation and displays. Employer comments are listed below.

1. [He] has been a good employee. He is willing to work hard and to take constructive criticism. [He] has been very dependable and he has taken a limited amount of responsibility in stride. His only down fall has been his inability to relate to fellow employees, and getting these employees to follow orders and to work up to their capacities.

2. I believe that a listing should be made for business and professional speaking which is required on many jobs. Appearance, bearing, and manner are also key factors that should be listed.

   To this point in [his] training program I am pleased with his performance. He is dependable and making a sincere attempt to learn the laws and VA Regulations we use on the job.

3. These unsatisfactory areas result in the lack of ability to do what appears to be learned.

4. [She] has made very good progress. She has been selling service contracts over the phone and has done well in all areas that are hard to learn. During Christmas she worked extra hours on the floor and adapted very well. She is well liked by her fellow employees and does a very good job.

5. I feel that [he] was good in all fields, but he doesn't work here any more. Reason-unknown. Moved to Texas. Quit Sunday 8-24-75.

6. [He] does a good job for us. The only thing we have a problem with is when he misses work. He does not call and let us know he won't be in. When he attended your school did he miss quite often?

7. This employee was terminated about 2 months after starting. Her skills were unsatisfactory in all phases. Her attitudes were even worse, and she seemed to have no desire to learn. Any time she was corrected or received instructions, you were always in for an argument.

Automotive

Thirteen usable evaluation forms were returned for Automotive. Although job titles included general mechanic, tune up mechanic, and front end mechanic, all are considered simultaneously in area evaluation. A summary of responses is contained in Table 3.

Table 3
Summary of Automotive Evaluations

	Skills Not Required	Unobserved	Unsatisfactory	Satisfactory	Above Average	Superior
1. Gas Welding.	6	2	3	2	0	0
2. Arc Welding.	6	3	3	1	0	0
3. Follows safe procedures and practices.	2	1	1	6	1	1
4. Use of basic hand tools.	1	0	2	8	1	1
5. Use of precision tools.	3	2	2	4	1	0
6. Use of shop equipment.	1	0	2	7	3	0
7. Repair of drum brake systems.	3	1	2	6	1	0
8. Repair of disc brake systems.	3	1	2	6	1	0
9. Repair of power brakes.	3	3	2	4	1	0
10. Balances tires (spin or bubble method).	3	5	1	3	0	1
11. Inspects and packs wheel bearings.	2	1	2	6	0	2
12. Front end repair.	6	4	1	2	0	0
13. Front end alignment.	7	4	1	1	0	0

Table 3
Summary of Automotive Evaluations

	Skills Not Required	Unobserved	Unsatisfactory	Satisfactory	Above Average	Superior
14. Overhaul of manual steering gears.	7	4	1	1	0	0
15. Overhauls and repairs power steering units.	8	4	1	0	0	0
16. Services and tests batteries.	1	0	1	10	0	1
17. Repairs and overhauls starters and starting systems (including solenoid).	5	1	1	5	0	1
18. Repairs charging systems (includes alternator, generator, and voltage regulator).	5	1	2	4	0	1
19. Repair of auto lighting systems.	3	0	3	6	0	1
20. Diagnosis of fuel system problems.	5	2	2	3	0	1
21. Replaces and/or rebuilds fuel pumps.	6	1	1	4	0	1
22. Replacement of fuel lines and fuel filters.	3	0	1	7	1	1
23. Replaces and/or rebuilds carburetors (all types).	5	1	2	4	0	1
24. Knowledge of automotive fuels.	2	1	2	7	0	1
25. Overhauls and repairs automatic chokes.	4	2	2	4	0	1
26. Services and repairs auto emission systems.	5	3	2	3	0	0
27. Performs tune-ups.	2	2	3	5	0	1
28. Tests engine condition using sun test equipment.	3	3	3	2	1	0
29. Repairs distributer and components.	4	2	2	4	0	1
30. Repairs and services the ignition system.	4	1	2	4	0	2
31. Tests engine systems operations (includes cranking system, charging system, coil, and secondary cable resistance).	4	2	2	9	0	1
32. Inspects and overhauls the valve train.	7	2	1	2	0	1
33. Inspects and overhauls the engine block.	7	2	1	2	0	1
34. Services lubricating systems (includes oil pumps).	4	2	1	5	0	1
35. Services and repairs cooling systems and system components.	4	0	1	7	0	1
36. Operation of machinery:	3	0	1	3	0	0
a. Boring Bar.	10	0	1	0	0	0

Table 3
Summary of Automotive Evaluations

	Skills Not Required	Unobserved	Unsatisfactory	Satisfactory	Above Average	Superior
b. Rod and Cap Grinder	10	0	1	0	0	0
c. Piston Pin Hone	10	0	1	0	0	0
d. Piston Pin Press	9	1	1	0	0	0
e. Crankshaft Grinder	10	0	1	0	0	0
f. Piston Knurlizer	10	0	1	0	0	0
g. Valve Seat Replacer	10	0	1	0	0	0
h. Valve Guide Installer	8	2	1	0	0	0
i. Surface Grinder	9	0	1	1	0	0
j. Crack Finder	9	1	1	0	0	0
37. Services and rebuilds clutch assemblies on cars with standard transmissions.	5	2	1	4	1	0
38. Services and repairs standard transmissions.	6	1	2	4	0	0
39. Troubleshoots and repairs two-speed auto. transmissions.	8	4	1	0	0	0
40. Troubleshoots and repairs three-speed auto. transmissions.	8	4	1	0	0	0
41. Repairs drive shafts (includes U-joints and center supports).	5	1	2	4	0	1
42. Repairs axle bearings and seals.	3	1	3	4	0	1
43. Repairs differentials.	5	3	1	2	0	1
44. Test and diagnose problems in auto air conditioners.	8	3	1	1	0	0
45. Services and repairs auto air conditioners.	9	2	1	1	0	0
46. Use of reference manuals.	3	0	2	7	0	1
47. Use of parts manuals.	4	0	2	6	0	1
48. Cleanliness (parts and work area).	1	0	1	7	2	2
49. Changes oil and general servicing.	2	0	1	6	2	2
50. Lubricates chassis.	1	0	1	7	2	2
51. Rotates and repairs tires.	3	0	1	6	1	2

Table 3
Summary of Automotive Evaluations

	Skills Not Required	Unobserved	Unsatisfactory	Satisfactory	Above Average	Superior
52. Minor body adjustments.	6	0	1	4	0	2
53. Washing, waxing and cleaning cars.	8	0	2	2	0	1
54. Inspects new cars.	10	0	1	1	0	1
55. Prepares new cars for customer delivery.	8	1	1	1	0	2
56. Minor warranty repairs on new cars.	8	1	1	1	0	2
Total n	353	90	99	226	19	45
%	42.4	10.8	11.9	27.2	2.3	5.4
57. Related employability skills.						
a. Dependability.	0	0	2	4	3	3
b. Loyality.	0	0	1	6	3	2
c. Punctuality/attendance.	0	0	2	3	4	3
d. Cooperation with fellow employees.	0	0	2	4	3	3
e. Cooperation with supervisors.	0	0	1	3	5	3
f. Pride in his/her work.	0	0	3	4	3	2
g. Industriousness.	0	0	2	5	2	2
Total n	0	0	13	29	23	18
%	0.0	0.0	15.7	34.9	27.7	21.7

Overall evaluation of technical proficiency is fair. Only 99 out of 832 responses are in the "Unsatisfactory" category. However, 443 responses are either "Skills Not Required" or "Unobserved." Adjusting for this fact, 25.5% of all responses are unsatisfactory, 74.5% are satisfactory or better.

With regard to employability traits, 15.7% were marked "Unsatisfactory." There were no "Skills Not Required" or "Unobserved" responses; therefore, 84.3% of all responses may be regarded as satisfactory or better.

Several skills acquired at Mountain-Plains are apparently not required. Welding in particular, was often marked "Skills Not Required" as were front end work, fuel pump rebuilding, transmission work, air conditioning, new car preparation, and work with various specialized machines.

Skill areas apparently required by nearly all employers included tools, equipment, brake work, electrical systems, fuel systems, cooling systems, and cleanliness.

Mechanics trained by Mountain-Plains are generally regarded by their employers as fairly competent and quite reliable. The following comments are included in support of this assertion.

1. Some of these markings may be unfair but because of [his] slowness and dreaminess it is necessary to mark them unsatisfactory. I felt many times that he was not well and didn't always have control of the things that happened. He'd spend time standing and dreaming as if in another world instead of digging in and getting busy.
2. Employee is dependable but is moderately slow in picking up more refined aspects of brake and ignitions systems. With training he is progressing at a fairly slow rate but is progressing.

3. He was a pretty good worker with very close supervision. He was not strong physically. He was taking down tractors for parts for us mostly and the rest of the time we used him as a laborer.

4. This young man accepted a job with us, but never showed up to go to work!

5. Sorry to inform you that he only worked for us one week. He felt he couldn't handle the job. As far as I know he went to work for a Ford Dealer here in Lincoln.

6. Employee was not prepared to compete in Automotive shop using Flat Rate Pricing and Pay System. I feel he thought he was adequately trained to perform under this type pay plan, not fully realizing the years of experience required, coupled with a training program such as Mountain-Plains, to reach Journeyman status. His low earning ability at this time has resulted in some dissatisfaction on his part. However, he is entering into a new job area that he sould be much more satisfied with.

7. He is no longer employed by City Delivery Service, Inc. We let him go because of his inability to organize and inability to complete work in a reasonable amount of time.

8. Unsatisfactory. He was no mechanic. He worked 1 week for me and he got every one of his cars back for comeback work. He cost me more money taking care of his comebacks as to his total labor income.

9. Employee lacks common knowledge due to little experience. He needs quite a lot of supervision and is not very productive. Wastes time. A problem he has is lack of coordination in his hands.

10. Very pleased with him and will make a fine mechanic. The only comment about the program is they do not get enough practical experience, too much theory.

Small Engines

The Small Engines repair area completed three students who were employed in their area of training. Two of the three employer evaluations were returned; however, one was not completed beyond the comment section. The evaluation displayed 15.2% of the responses as being "Skill Not Required," 12.1% of the responses as "Unobserved," and 72.7% of the responses as being "Satisfactory." There were no responses in the "Unsatisfactory," "Above Average," or "Superior" categories. The evaluation appears to be generally satisfactory as all the employability traits, as well, are in the satisfactory category. The employers' comments are listed below.

1. He has been with us since September, 1975. His work has been satisfactory in the areas he is familiar with. He seems to lack the confidence to try repairing items he is not trained to service. He also has trouble in the area of shop housekeeping. This is a constant problem in most shops.

2. I didn't keep him long enough to give a good evaluation. His work was poor. We had a lot of returns. He as not careful about how he did a job. He was lazy and would show up late for work. He would call in sick and take the day off and I found he was not sick but wanted to go cycle riding with friends. He did not keep a clean area and had poor understanding on how to fully check out the job. He would fix only obvious problems, and not check well. Example: a motor had knocking sounds. He overhauled by replacing pistons and rings. The motor still had knocking sounds so I had an experienced mechanic pull down. It had a bad rod bearing and bent rod that he did not find. In all, I found him to be a very unsatisfactory employee--not necessarily due to training but due to his own attitudes and work habits.

Carpentry

Only two usable employer evaluations were returned for exited Carpentry students. Although this number can hardly be considered representative, about 90% of all competency items produced "Satisfactory" or better ratings. The one comment received was "Employee had a poor attitude, was not industrious, was not capable of completing any carpentry work without close supervision. The main thing he lacks is ambition."

Electrical Wireman

Five employers returned usable evaluations. No competencies were rated as unsatisfactory. Roughly one-third of all competencies listed were unobserved or considered unimportant by the employers. Competencies not required included blueprint reading and some areas of DC circuitry.

On employability traits, 11.4% of all responses were in the "Unsatisfactory" column. One student in particular seemed to have severe attitude problems. Employer comments are listed below.

1. Loyalty - questionable. [He] has missed more work than necessary partly for medical or physical reasons. He cannot or does not see necessary talks unless specifically directed. He seems to be competent in any work he is directed to do, but simply seems to lack motivation.
2. In general, [he] has been doing a fine job for us. He is fast to learn, is well liked by his co-workers, he is willing to take on any job, and knows his limits. In short, if you can turn out any more men of his caliber, we would be very interested in them.
3. An all-around excellent employee and could use 20 more like him.

Plumbing

Four employers returned Plumbing evaluation forms. This is a fairly representative number (8 students exited as Plumbers during the period under investigation). All responses to competency items (excluding "Skills Not Required" and "Unobserved") were "Satisfactory." However, 42.6% of all responses indicated that competencies listed were irrelevant. While it may appear that Mountain-Plains Plumbing curriculum is irrelevant, a closer look reveals that among the "Skills Not Required" competencies are such non-trivialities as "Installation of plumbing fixtures" (Item number 1). It is apparent that Mountain-Plains students are being employed within the plumbing profession but working as laborers or little better.

In terms of employability, ratings were slightly lower; 15% (adjusted) of all responses were "Unsatisfactory." Given the apparent work conditions of some of the students (employees), this figure seems somewhat low. Employer comments are listed below.

1. [He] worked for us only about a week. I therefore cannot fill in the preceding questions.

   My personal feeling as to the training of a plumber could best be accomplished by working as a student rather than an apprentice, before he hires out as an apprentice. I could not afford to pay a person what is required to live now days and spend ½ or more of my time training this person.

   If the money that is spent on your plumbing program had been granted to the individuals and a part of it to the employer, they would both benefit and in turn we would be able to turn out a few craftsmen for our trade.

   You may disagree with me, but I have trained many young people, several of whom are now running their own shops.

2. [He] couldn't get along with the journeymen plumbers. We had a woman apprentice also and she didn't work out too well--at least the journeymen blamed all of the leaks on either him or the woman plumber. I personally believe that you are doing a good job. We need much more of this thing. I would like to hire one of your draftsmen and two heating and air conditioning servicemen.

Heating Systems

Only one evaluation form was received for an exited Mountain-Plains student employed as a heating systems serviceman. Skills were all rated as satisfactory or better. Nearly all employability traits were rated as superior. No comments were made on the form.

Refrigeration

Three usable evaluation forms were returned by employers of exited Mountain-Plains refrigeration students. The tone of evaluations was favorable, about 12% of all responses to competency items were "Unsatisfactory." Employability was rated even higher by employers (100% satisfactory or better). Two evaluation forms contained comments which are listed below.

1. He is very slow in thinking and in movement. He can't make his own decisions. He is very sloppy in his work, shop, and on appliances. I have been using him mostly for clean-up type work on appliances such as washers, dryers, ranges, refrigerators, but is very slow and incomplete. He doesn't finish jobs without having to push him and will switch from one project to another. He works very hard and seems to enjoy his work.

2. If possible, more field work would be of great benefit.

Appliance Repair

Appliance repair student/employees were evaluated by two employers. Although it is difficult to generalize from this few observations, employability appears to have been a major problem (roughly 80% of all responses to employability items were unfavorable). Neither employee apparently stayed on the job long enough to have skills rated effectively. Employers comments are listed below:

1. This employee is no longer with us as he apparently did not have a good basic mechanical skill. At times he seemed to forget which way bolts turned on appliances. This was even after he had repaired the same type and model of appliance several times before. His memory retention was not satisfactory. What ever he may have been taught at school seemed lost. His immature attitude towards his work left him incapable of performing up to par.

2. Had an attendance problem with him and he needed constant supervision. Quit with no notice--rated as not rehirable.

Radio & TV Repair

A total of eight usable evaluation forms were returned. Responses for job title Radio & TV Repairman are summarized in Table 4.

Table 4

Summary of Radio & TV Repairman Evaluations

	Skills Not Required	Unobserved	Unsatisfactory	Satisfactory	Above Average	Superior
1. Knowledge of DC circuitry.	0	0	1	6	0	0
a. Calculates current flow.	0	1	0	6	1	0
b. Use of ammeter.	0	0	0	7	1	0
c. Calculates voltage.	0	1	0	5	1	0
d. Use of voltmeter.	0	0	0	6	1	0
e. Calculates resistance.	0	1	0	4	1	0
f. Use of ohmmeter.	0	0	0	5	2	0
g. Knowledge of series circuits.	0	1	0	5	1	0
h. Knowledge of relationships of current, voltage, resistance and power (Ohm's law, etc.).	0	1	0	5	0	1
i. Knowledge of parallel circuits.	0	1	0	5	1	0
j. Use of Kirchoff's laws.	1	2	0	4	0	0
k. Knowledge of combination series - parallel circuits.	0	2	0	4	1	0
l. Knowledge of magnetism and induction.	0	2	0	4	1	0
m. Knowledge of mutual induction, RL circuits and time constants.	0	2	0	5	0	0
n. Knowledge of capacitance and RC time constants.	0	1	0	6	0	0
2. Knowledge of AC circuitry.	0	1	1	4	1	0
a. Knowledge of electrical generators.	4	2	0	1	0	0
b. Knowledge of relationships between current and voltage in inductive and capacitive AC currents.	1	3	0	3	0	0

Table 4
Summary of Radio & TV Repairman Evaluations

		Skills Not Required	Unobserved	Unsatisfactory	Satisfactory	Above Average	Superior
c.	Knowledge of impedance, reactance and power in AC circuits.	1	3	0	3	0	0
d.	Knowledge of transformers.	0	0	1	6	0	0
e.	Knowledge of electronic power supplies.	0	1	2	4	0	0
f.	Makes mathematical calculations necessary to describe electronic properties of AC series circuits.	1	3	1	2	0	0
g.	Knowledge of resistive-inductive and resistive capacitive AC series circuits.	0	3	1	3	0	0
h.	Knowledge of the effects of resonance on AC series circuits (resistive-inductive and resistive-capacitive).	1	3	1	2	0	0
i.	Knowledge of resistive-inductive and resistive-capacitive AC parallel circuits (including resonance effects).	1	3	1	2	0	0
3.	Construction, installation and repair of broadcast radio receiving antennae.	2	2	1	2	0	0
4.	Construction and repair of radio signal detectors.	1	4	0	2	0	0
5.	Construction and repair of radio signal amplifiers (RF).	0	3	0	4	0	0
a.	Vacuum tube.	0	1	1	5	0	0
b.	Detector.	0	1	1	5	0	0
c.	Regenerative detector.	0	4	0	3	0	0
6.	Assembly and repair of radio power supplies.	0	1	2	3	1	0
7.	Assembly and repair of radio-audio detector circuits.	0	3	0	3	1	0
8.	Assembly and repair of RF amplifiers.	0	2	1	3	1	0
9.	Knowledge of oscillator circuits.	0	3	1	4	0	0
10.	Construction and repair of superheterodyne and shortwave receivers.	0	4	0	3	0	0
11.	Knowledge of the operational characteristics of television receivers.	0	0	2	4	1	0
12.	Troubleshoots and repairs malfunctions in television audio sections (B & W).	0	0	2	4	0	1
13.	Troubleshoots and repairs malfunctions in television video sections (B & W).	0	0	3	3	0	1
14.	Troubleshoots and repairs malfunctions in the AGC section of black and white television sets.	0	0	2	3	1	0
15.	Troubleshoots and repairs malfunctions in the "sweep section" of black and white television sets.	0	0	4	2	0	0
a.	Synch section.	0	1	3	3	0	0

Table 4
Summary of Radio & TV Repairman Evaluations

	Skills Not Required	Unobserved	Unsatisfactory	Satisfactory	Above Average	Superior
b. Vertical synch section.	0	1	4	2	0	0
c. Horizontal synch section.	0	1	4	2	0	0
d. Horizontal sweep section.	0	1	4	2	0	0
e. Vertical sweep section.	0	1	3	3	0	0
16. Troubleshoots and repairs malfunctions in the high voltage and power supply sections of black & white television sets.	0	1	4	2	0	0
a. Horizontal sweep section.	0	1	4	2	0	0
b. Picture tube.	0	1	0	6	0	0
c. Low voltage power supply.	0	0	2	4	1	0
d. Video output section.	0	1	2	4	0	0
17. Diagnosis and adjusts malfunctions with regard to color television set-up.	0	0	2	4	0	0
a. Static convergence adjustment.	0	1	1	5	0	0
b. Dynamic convergence adjustment.	0	1	1	5	0	0
c. Purity adjustment.	0	1	1	5	0	0
d. Grey scale adjustment.	0	1	1	5	0	0
18. Troubleshoots and repairs malfunctions in the color section of color television sets.	0	1	2	2	0	0
a. Color killer section.	0	1	4	2	0	0
b. Color synch section.	0	1	4	2	0	0
c. Color oscillator section.	0	1	4	2	0	0
d. Color I.F. section.	0	1	3	3	0	0
e. Color demodulator section.	0	1	4	2	0	0
f. Video amp section.	0	1	3	3	0	0
19. Troubleshoots and repairs malfunctions of special sections of color television receivers.	0	1	1	2	0	0
a. Tuner section.	0	1	3	3	0	0
b. A.F.T. section.	0	2	3	2	0	0

Table 4
Summary of Radio & TV Repairman Evaluations

	Skills Not Required	Unobserved	Unsatisfactory	Satisfactory	Above Average	Superior
c. Voltage regulator.	0	1	3	3	0	0
d. Automatic chroma control.	0	2	3	2	0	0
Total n	13	92	102	242	18	3
%	2.8	19.5	21.6	51.7	3.8	0.6
20. Related employability skills.						
a. Dependability.	0	0	0	1	5	1
b. Loyality.	0	0	0	3	3	1
c. Punctuality/attendance.	0	0	0	1	4	2
d. Cooperation with fellow employees.	0	0	0	2	4	1
e. Cooperation with supervisors.	0	0	0	2	4	1
f. Pride in his/her work.	0	0	0	3	3	1
g. Industriousness.	0	0	0	3	3	1
Total n	0	0	0	15	26	8
%	0	0	0	30.6	53.1	16.3

The implications of Table 4 are that employers are generally satisfied with the competence of Radio & TV Repairmen trained by Mountain-Plains and extremely pleased with their employability traits. While 102 responses out of a total 470 responses (21.6%) were unfavorable, an adjusted rate is 27.8% (when 102 "Skills Not Required" and "Unobserved" responses are disregarded). Yet 72.2% of all skill related responses indicate that employees are performing satisfactorily or better.

The major problem area is troubleshooting. The main troubleshooting problems seem to be with black and white televisions (sweep and high voltage) but also extend to color (color section, special sections). Several employers rated their employees "Unsatisfactory" in these areas. Nearly all skills were deemed relevant by employers; the only possible exception was electrical generators.

There were no unsatisfactory marks for any employability trait. Employers appear to be very satisfied with their new employees in terms of dependability, punctuality, pride, cooperation, etc. The following comments support this point.

1. [He] is an intelligent boy, but your course was too fast and not enough time was given on practical circuits. One cannot learn electronics by reading and taking exams.

2. In the last several months that [he] has been with us, his prime work area has been in the audio section of the shop. He has progressed well in this section developing skills in analyzing equipment and circuit problems. I feel, at this time he is capable of troubleshooting transistorized color TV receivers and exercising proper caution in doing so.

3. [He] is doing a good job. He needs more time in on-the-job training. I feel he should develop into a fine Electronics Technician.

4. He has taken a placement guide exam as well as practical application in servicing. His basic (very basic) knowledge is sound, however he is very weak in applied electronics. Tube as well as transistor circuits are well above his understanding. He will attend our basic electronics school in January. I believe he will become a fine technician. I would be interested in just what courses he has taken. I may have been expecting too much when he first arrived.

5. I think he is a very willing worker and has a good personality, but I think he is lacking in training. He meets the public very well and is getting to be a good salesman. He also will go ahead with things without me having to tell him.

   As for the service-end of it, he falls short in several aspects. He is very confused in how to determine what is bad on either a line coupled or a transformer coupled power supply. He also has a lot of trouble on synchronized circuits. He was totally unaware that if you had no brightness that it might be in the video out stage instead of the high voltage stage. When he came here, he knew nothing about PA systems, cassett and 8 track tape players, record changers, antenna systems, TV preamps, rotors, or the difference between coaxial and flat lead-ins.

   In short, I think he shows a lot of potential, but either he didn't grasp it, or your school isn't very thorough because he doesn't know a lot about things he should. I couldn't afford to keep him if he wasn't on a OJT program, because I have to help him too much.

6. I have two employees working for me from your school. Both have been weak in troubleshooting and being able to diagnose a problem quickly. I feel more time should be spent working on actual repairs. Troubleshooting of a problem on a bread board does not compare to the actual repair of an electronic device. Time should be spent on IF alignment in the classroom. This is one repair that requires much experience and knowledge to complete the task.

7. He is doing well. We'll have a good technician and an asset to our company. Thanks.

Drafting

Five usable evaluations were received for Drafting. A summary of responses of employers of Mountain-Plains trained Draftpersons is contained in Table 5.

Table 5
Summary of Drafting Evaluations

	Skills Not Required	Unobserved	Unsatisfactory	Satisfactory	Above Average	Superior
1. Use of line weights.	0	0	0	5	0	0
2. Centering.	0	0	1	3	1	0
3. Freehand lettering.	1	0	1	3	0	0
4. Leroy lettering.	0	0	0	3	2	0
5. Geometric constructions.	1	0	0	3	1	0
6. Projection of missing lines.	2	1	0	1	1	0
7. Freehand sketch isometric drawings.	2	1	0	2	0	0
8. Multi-viewed projections.	1	3	0	1	0	0
9. Properly dimensions drawings.	0	0	1	3	1	0
10. Section views.	0	2	1	2	0	0
11. Auxiliary views.	0	2	1	2	0	0
12. Isometric drawings.	1	2	0	1	1	0
13. Two-point perspectives.	2	2	0	1	0	0
14. Construction of paper models of transition pieces.	3	2	0	0	0	0
15. Draws plans that can be used for construction purposes.	0	1	0	2	2	0
Total n	13	16	5	32	9	0
%	17.3	21.3	6.7	42.7	12.0	0.0
16. Related employability skills.						
a. Dependability.	0	0	1	1	3	0
b. Loyalty.	0	0	0	2	2	0
c. Punctuality/Attendance.	0	0	1	1	2	1

Table 5
Summary of Drafting Evaluations

	Skills Not Required	Unobserved	Unsatisfactory	Satisfactory	Above Average	Superior
d. Cooperation with fellow employees.	0	0	0	2	2	1
e. Cooperation with supervisors.	0	0	0	2	2	1
f. Pride in his/her work.	0	0	0	3	2	0
g. Industriousness.	0	0	2	0	3	0
Total n	0	0	4	14	19	2
%	0.0	0.0	11.8	32.4	47.1	8.8

The response to "Skills Not Required" equalled 17.3% of the total responses. Excluding "Skills Not Required" and "Unobserved" from the other skill related questions, "Unsatisfactory" received 10.5% of the responses, "Satisfactory" received 69.9%, and "Above Average" received 19.6%. There were no responses for the "Superior" category. The results are generally favorable. The curriculum seems to be adequate for Drafting occupations. Due to the small number of evaluations, the degree to which this analysis is valid is questionable and should be considered in that perspective. The employability skills received no responses in "Skills Not Required" or "Unobserved." "Unsatisfactory" received 11.8% of all responses, "Satisfactory" received 32.4%, "Above Average" received 47.1%, and "Superior" received 8.8%. The dominance of "Above Average" is a strong indicator that persons completing the Drafting area and employed in that occupation appear to be well prepared.

The employers' comments are listed below.

1. Unsatisfactory comments. Centering--could not center information on title blocks. Dependability--could not depend on him to show up for work. Attendance--here for approximately 2½ months and missed 1½ weeks of work. Industriousness--did not take any initiative. He left without any notice, calling only to have his check sent. Very unbusinesslike and very detrimental to your program. We will take a long look before we hire any more of your students!

2. General neatness--above average. She takes a great deal of pride in her work and strives very hard to improve herself. We are quite pleased with her ability.

3. He is a "daydreamer." He will set and wait until exact instructions are given. He is not a self starter. (9) Again, unless given dimensions, he will not take the time to check some. (10 and 11) Poor understanding of how parts will fit together.

4. Mapping skills were not satisfactory, however, this employee has shown good ability to learn new drafting problems.

   I suggest that Mountain-Plains give greater emphasis to Geologic mapping and presentations and engineering work as it pertains to the oil and mining industries. This is important to your student's ability to fill the needs of most drafting jobs in the Casper area. This probably also applies to Billings.

CONCLUSIONS

Employer evaluations for the final research and development year of Mountain-Plains were generally very favorable. Adjusting for skills not required or not observed, 82.5% of all employer responses indicated satisfaction with the skills of exited Mountain-Plains students, and 89.2% of all employability responses were satisfactory or better. Nearly half of the employability ratings (48%) were "Above Average" or "Superior," 16.9% of all skill ratings were in these categories. Table 6 summarizes evaluations by curriculum area.

The ratings of several curriculum areas indicate positive responses to evaluations of a year ago (Pollack, 1975). Automotive students in 1975 demonstrated severe attitude/employability problems and some skill deficiencies. In the present evaluation, approximately 75% of all skill ratings were satisfactory or better, and about 85% of all employability ratings were satisfactory or better.

Some Building Trades areas continue to have problems. Although most appear to be in the employability sphere, it is apparent that many of our students, especially in Plumbing and Electrical Wiring, were employed as laborers. More selective placement or perhaps realignment of the curriculum in more realistic terms may be the answer.

Table 6
Summary of Employer Evaluations by Curriculum Area

		SKILLS						
		Skill Not Required	Unobserved	Unsatis-factory	Satis-factory	Above Average	Superior	Total
Office Education		317	58	14	129	40	15	573
Food Services		24	1	0	12	21	2	60
Marketing & Distribution		56	31	20	84	35	2	228
Automotive		353	90	99	226	19	45	832
Small Engines		5	4	0	24	0	0	33
Carpentry		1	18	8	38	17	0	82
Electrical Wiring		32	32	0	101	9	0	174
Plumbing		15	2	0	19	0	0	36
Heating		10	19	0	8	14	3	54
Refrigeration		38	60	5	38	0	0	141
Appliance Service		38	8	8	22	0	0	76
Radio & TV Repair		13	92	102	244	18	3	472
Drafting		13	16	5	32	9	0	75
TOTAL	n	915	431	261	977	182	70	2836
	%	32.2	15.2	9.2	34.4	6.4	2.5	100.0
Adjusted	%			17.5	65.6	12.2	4.7	100.0

		EMPLOYABILITY TRAITS						
		Skill Not Required	Unobserved	Unsatis-factory	Satis-factory	Above Average	Superior	Total
Office Education		1	0	7	72	67	26	173
Food Services		0	0	5	16	8	5	34
Marketing & Distribution		0	0	9	30	17	14	70
Automotive		0	0	13	29	23	18	83
Small Engines		0	0	0	6	0	0	6
Carpentry		0	0	6	15	7	0	28
Electrical Wiring		0	0	4	19	5	7	35
Plumbing		0	0	3	14	3	0	20
Heating		0	0	0	0	2	5	7
Refrigeration		0	0	0	0	6	15	21
Appliance Service		0	0	11	3	0	0	14
Radio & TV Repair		0	0	0	15	26	8	49
Drafting		0	0	4	11	16	3	34
TOTAL	n	1	0	62	230	180	101	574
	%	0.2	0.0	10.8	41.1	32.9	15.0	100.0
Adjusted	%			10.8	41.2	33.0	15.0	100.0

SUMMATIVE IMPLICATIONS

A major issue of employer evaluation of exited Mountain-Plains students has been the viability of employability as a formal concept in occupational education. Employers' responses overwhelming support this concept. While they are directed to respond to items dealing with both competency and general employability, undirected comments focus on employability as often as not. This is clearly a viable concept, and these evaluations validate the sharp focus of Mountain-Plains on the employability issue and its formal procedures for assuring maximum employability in exited students.

A somewhat minor implication of these evaluations is that some of the Building Trades curricula are unrealistic or that placement is occasionally faulty. The ratings of Plumbers and Electrical Wiremen provide the basis for this assessment. While it is true that these areas are traditionally guild or union oriented, there must be some reasonably skilled and productive level at which Mountain-Plains students may enter. The cost effectiveness of training individuals to read blueprints, lay out wiring or plumbing plans, rough in, and finish becomes very questionable when those individuals are used as laborers or hod carriers and given only limited hopes for advancement.

Skill ratings were very good, and employability ratings were even better. The variance between 1974-75 evaluations of some curriculum areas indicates that Mountain-Plains has responded to employer criticism to produce either more competent or more employable individuals. While competence improvement reflects primarily on the Curriculum Department and Educational Services Division, and employability improvement primarily indicates improvement in Student Services Division, all improvements imply that Mountain-Plains is capable, on an operational level, of responding to the needs of employers and incorporating their critiques into improved instructional/developmental procedures.

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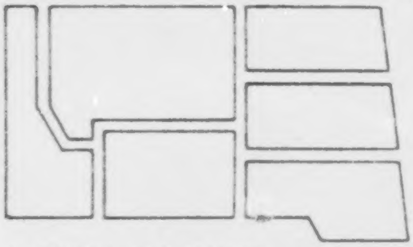

A REGIONAL PROGRAM IN

COMPREHENSIVE FAMILY EDUCATION

FINAL REPORT ON USER TRIAL OF MOUNTAIN-PLAINS CURRICULUM

JULY 1976

BOX 3078 GLASGOW AFB, MONTANA 59231

MOUNTAIN-PLAINS
EDUCATION
ECONOMIC
DEVELOPMENT
PROGRAM, INC.

FINAL REPORT ON USER TRIAL
OF MOUNTAIN-PLAINS CURRICULUM

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INTRODUCTION TO INSTRUCTIONAL/CURRICULUM EVALUATION REPORT SERIES

Instructional/Curriculum Evaluation constitutes one aspect of the evaluative process of Mountain-Plains. Reports in this series, together with reports from External and Affective evaluation series, will provide a thorough documentation of the processes and products of Mountain-Plains. Major subdivisions of the series include:

1. User Trial Reports
2. Descriptive Characteristics
3. Summative Analysis
4. Reliability and Validity Studies
5. Student Evaluation of Staff and Curriculum

Individual reports in each series are currently available from, or are in the process of being incorporated into, the ERIC retrieval system. By the conclusion of the NIE research cycle, Instructional/Curriculum Evaluation Reports will number about 40 or 50. Many reports span two or more areas. These include overall internal evaluation reports and reports on the effects of affective variables on cognitive performance.

The reader of individual Mountain-Plains documents should keep in mind that a report takes on full significance only in relation to its report series and the overall research program, and that the reader typically finds frequent reference to earlier reports. While each report is designed to have independent value, such "series dependence" is an inescapable aspect of any systematic program research, and requires some indulgence on the part of the reader.

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FINAL REPORT ON USER TRIAL OF MOUNTAIN-PLAINS CURRICULUM

Introduction

User Trials were conceived in 1974 as an objective method for determining the effectiveness of Mountain-Plains curriculum packages and delivery system. Early in 1975, the trials' design was complete containing information packets, orientation guides, teacher guides, evaluation instruments, time requirement charts and other items deemed necessary to launch the project. Refining continued until the final draft was ready for use in mid-year of 1975.

In keeping with the final design, a Site Selection Committee identified and contacted heterogenous sites having differing student types and with administrators and instructors who were willing to involve themselves with the task of incorporating a foreign curriculum with a unique approach into their instructional program. This committee was made up of persons from Departments of Education from the states holding trials. Public schools, penal institutions, vocational schools and occupational skill centers were represented. Student populations included multiple ethnic and socio-economic groups with students ranging in age from 12 through adult.

Once these sites were selected, and representatives of the schools and institutions contacted, memoranda of agreement were signed and the user trial effort commenced.

A sizeable logistical problem was presented by the amount of commercial materials which had to be bought and transported to the various sites. Also, Mountain-Plains curriculum materials and accessories had to be printed, bound and delivered in time for instructors and students to be able to begin at a time convenient to them.

Materials and such equipment as were furnished by Mountain-Plains began filtering into school districts at about the time schools began in most of the districts in the Fall of 1975. In spite of unanticipated delays, most of the trial schools were fully operational before the end of 1975, at which time the first data returns began to reach Mountain-Plains.[1]

At the time User Trials were being conceived, the Mountain-Plains Newsletter carried a series of articles announcing the trials' intentions. Shortly after the first of these articles was published, several requests to use Mountain-Plains curriculum products were received by the Research Services Division. At the time the actual site selections were made, priorities were necessarily established in order to utilize only those which best fitted into the research design of User Trials. Beneficially, a number of alternate sites were identified in case of defection of a primary site. It was also planned that these alternate sites might provide a second echelon of User Trials to be considered at a time following the first effort and was in a state of relatively independent progress. The second echelon has not been used.

In order that trial site instructors, administrators and others might have a thorough briefing on how to use the Mountain-Plains curriculum system to advantage, an Orientation Guide for instructors and a Teachers Guide were developed. Both of these documents were offshoots of similar guides already in use by Mountain-Plains staff. It was envisioned that these documents in conjunction with an orientation by a member of the Mountain-Plains staff would suffice as the total instruction necessary to permit others to utilize

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[1] For detailed description of specific activities preceding and during User Trials, refer to User Trial Progress Report No. 3, October, 1975, Research Services, Mountain-Plains.

Mountain-Plains curriculum products. Experience indicates that this is probably the case inasmuch as returned documents and data have indicated that many of the instructors using Mountain-Plains products were well-versed in its proper use.

The trials were conducted with a minimum of formal agreement. A contractual arrangement was deemed inappropriate and probably not binding under operational circumstances. In place of a contract, three other devices were utilized, and appear to be sufficient to provide a working relationship between Mountain-Plains staff and User Site staff.

The first has been the verbal commitment on the part of the State Contact Persons to the effect that they approach appropriate persons in their area, provide them with initial and continuing liaison with Mountain-Plains, and give the User Trial effort support from their vantage points. They, in turn, obtained a verbal agreement from their constituents.

The second device was a Memorandum of Understanding which was signed by the Director and the State Contact Person, and spelled out responsibilities and benefits of both parties.

The third and final device was the Standard Acknowledgement form which acknowledged that Mountain-Plains does have a developmental copyright on its products and that they should not be reproduced by the user without prior permission from the copyright holder. This was to prevent indiscriminate reproduction of Mountain-Plains products.

Soon after the trials were operational it was discovered that, although all staff involved had been provided with similar orientation and were using identical training manuals, some were using the system as designed and some were not. As the trials progressed, this impression was to become more evident, as later observations will indicate.

Timing was another factor in later results. State Contact Persons committed their states at a time when school administrators and teachers were, in most cases, not present to protest. It is suspected that there would have been some protest, judging by the non-performance on the part of some. Other unforeseen problems hampered the starting times, such as commercial materials delay. In spite of these annoying difficulties, there remained those administrators and instructors who overcame such forms of adversity in an admirable fashion, took pains to learn the new system, organized themselves for the new venture, and succeeded in putting the products through the prescribed tested routine.

During the active trials period, maintenance activities were provided by Research Services Division staff. These took the form of periodic visits to sites, initiating and answering phone calls, retrieving lost materials, furnishing those which were missing, loaning equipment, and affording moral support for sagging programs, etc. During this maintenance period some events occurred which were expected, but also some which were not. One such surprise occurred when, contrary to what was predicted though perhaps expected, contacts were made, not by those who were having deep trouble with the system, but by those who were doing well yet needed additional information to refine their already adequate efforts.

Data collection provided a special set of problems. A number of data were necessary to provide the answers posed by research questions contained in the User Trial Design. Although every attempt was made to minimize paper work, a number of retrieval documents were necessary to provide this data base. In order that instructors as well as Research staff were not inundated by paper at the last minute, it was requested that all forms such as test answer sheets, CD-5s, etc., be processed and returned to Mountain-Plains on a weekly basis. This would also give Research Services staff control over quality and also signal the need for assistance to lagging senders. As it turned out, this was exactly the case. Unexpectedly however, in spite of repeated requests to the contrary, one site insisted on returning bales of LAP test answer sheets when the stated need was for the CD5 Form, which is a student response form attached to each LAP, and from which are derived constructive comments relative to each individual LAP. Also, there were teachers and administrators who, for unknown reasons, ignored the request and deluged this office with reams of unit and course post tests near the end of the trials. Unfortunately, many of these were unprocessable because of missing identifying information or because of other kinds of misuse. Again, those who adhered to instructions and honored requests in a timely fashion were those who achieved the highest degree of success using the system. A significant correlation would later be drawn between conscientious attention to prescribed detail-capable instructors/administrators and success using the Mountain-Plains Learning System.

DATA ANALYSIS

As noted in User Trial Progress Report No. 3, the purpose of User Trial was to assess the quality of Mountain-Plains products and the feasibility of external distribution. The major research questions posed in that report are reiterated here:

1. Does the process get the content across?
2. Does the curriculum work better at Mountain-Plains or User Trial sites?
3. Does the curriculum work better than other types of curriculum currently in use at sites?
4. Are the curriculum packages (LAPs) liked by students?
5. Do students perceive LAPs to be difficult to work with?
6. Is the orientation currently in use sufficient to enable instructors to use Mountain-Plains curriculum without too much outside assistance?
7. Is Mountain-Plains curriculum being used in accordance with orientation instructions?
8. Is there a relationship between instructor perception of Mountain-Plains curriculum and student performance?
9. Are there differences in student achievement between places that do and do not use Mountain-Plains curriculum in accordance with orientation instructions?

These questions were addressed through a number of tests and evaluation forms known as CD forms. These CD forms are attached as Appendix A.

METHOD

Participants. User Trial participants include school officials, teachers, students, and other individuals in Oregon, Arizona, Montana, and California. A total of 33 instructors and 547 students participated. In most instances, students were public school students, but in some cases, they were adults, prison inmates, or participants in special schools. Attachment B of User Trial Progress Report No. 3 was a complete listing of participants, positions, and descriptive characteristics and is included in this report as Appendix B.

Materials. Curriculum materials tested in User Trial spanned all major program occupational areas and support areas. Table 1 contains a summary of curriculum materials used and the Mountain-Plains program components they represent.

Table 1
Representation of Major Program Areas in
User Trial of Mountain-Plains Curriculum

Program Component	Curriculum Used
Foundation Education	Communication Skills
Office Education	Clerk Typist
Marketing & Tourism	Mid-Management Trainee
"	Institutional Cook
Mobility & Transportation	General Mechanic
Family Core Curriculum	Health Education
"	Consumer Education
"	Home Management
"	Parent Involvement
"	Leadership Training
Building Trades	Carpenter
"	Plumber
"	Refrigeration/Cooling Systems
"	Appliance Repairman

Procedure. Sites and alternates were selected in June, 1975. In the fall of 1975 instructors were oriented, and curriculum materials began to flow to each site. Arrangements were made for each site to collect all forms needed for evaluation by Mountain-Plains and to forward them once a week. Site visits were arranged during which time CD-2 forms (site adherance to Mountain-Plains procedures) were filled out by Mountain-Plains staff.

Weekly data returns were logged and processed by Mountain-Plains staff. Specific analytical procedures included scaling techniques, product-moment correlation, chi-square, analysis of variance (ANOVA), Newman-Keuls post hoc tests, t tests, and z tests. Application of specific procedures to specific research questions is explained in greater detail in the following section.

Results. Related to nearly all User Trial research questions is the fact that several students and instructors dropped out of the trials before completing their activities. Data returns from these individuals were very poor. Returns from those who stayed with the program were slightly better. Of over

100,000 tests and forms expected of User Trial participants, only five percent of this number or fewer were actually received and processed. Many forms returned were not usable due to lack of clarity or identification of the source of returns.

It is necessary therefore to deal with all results with regard to these circumstances. The major implication of the poor data return was the inability to make some of the comparisons specified in the research questions. Most absolute assessments were possible as were some gross comparisons. Finer distinctions and correlations had to be omitted in many instances. The format of presentation of results is question and answer, following the nine questions listed in a previous section of this report.

Question 6. Is the orientation currently in use sufficient to enable instructors to use Mountain-Plains curriculum without too much outside assistance? This question, addressed by Form CD-6, was answered in terms of amount of correspondence (mail or telephone) received from each site requesting assistance in matters not covered during the orientation. The assumption was that any instructor would probably encounter at least two problems of this nature during the course of the trials. If an instructor communicated more than two such problems to Mountain-Plains, it was concluded that orientation was not sufficient for that instructor. Fewer than 10% of all instructors were expected to be in this category. Of the 28 instructors providing data returns, only one exceeded the CD-6 limit. The five instructors who dropped the User Trial may not have been sufficiently motivated by the orientation to continue in User Trial. However, considering only those instructors who remained active, the answer to Question 6 is "Yes."

Question 7. Is Mountain-Plains curriculum being used in accordance with orientation instructions? The CD-2 Form,referred to earlier, was used to provide responses to this question. Of the 14 major points and numerous minor points related to compliance, each instructor was expected to receive an affirmative rating on at least 11 or roughly 80%. A total score of less than 80% was regarded as noncompliance.

Only 20 CD-2 Forms were filled out due to absences of instructor, change of instructor, failure of instructor to have system in operation by site visit date, etc. Of these 20 instructors, 11 (55%) were found to be in compliance. Since most of these assessments were made by the end of December, 1975, some major problems were predicted, and steps were taken to correct the situation. In some instances it was too late. One school, for example, seemed to be operating in open defiance of the Mountain-Plains system. Most, however, were hampered by the lack of clerical aides. Aides are a vital staff component of the Mountain-Plains system. The lack of clerical support was, in many instances, directly responsible for poor data returns.

Those curriculum areas requiring longest to complete (e.g. General Mechanic, Carpenter) were in nearly every instance the very areas not started by December, 1975, or the recipients of noncompliance ratings on CD-2 Forms. Those areas requiring little time (e.g. Health Education, Parent Involvement) were usually well under way and functioning within specified parameters long before the end of 1975.

Question 5. Do students perceive LAPs to be difficult to work with? Form CD-5 was used to address this question. The form was developed through the method of categorical judgement.[1] The form has five statements about the curriculum and six levels of agreement. The student indicates his opinion of LAP difficulty by checking the appropriate response, 1 indicating total agreement and 6 indicating total disagreement. Possible scores range from 5 to 30. The difficulty cutoff point was set at 15; all responses exceeding this total value were regarded as indicating that the LAP was too difficult.

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[1] Thurstone, L.L. A law of comparative judgement. Psychological Review, 1927, 34, 273-286.

A total of 813 responses were processed. These represented 18 instructors and approximately 300 students. Mean response was 7.0 with a standard deviation of 2.6. With a standard error of .09, one can state with 95% confidence that the mean lies somewhere between 6.8 and 7.2. Score means ranged from 5.6 (most favorable) for Institutional Cook to 10.9 (least favorable) for General Mechanic. None of the areas exceeded 15 on mean CD-5 score. The over value of 7.0 indicates almost total agreement with the assertion that the LAPs are easy to use.

Question 4. Are curriculum packages (LAPs) liked by students? The appropriate form for this question was CD-7, a student evaluation of curriculum materials form. This ten-item scale, developed by the method of categorical judgement, has an internal consistency coefficient (alpha) of .95. Total score range is from 10 to 60, with higher scores representing less favorable responses. A cutoff score of 30 was set as the criterion point below which responses must lie.

CD-7 forms were acculumated and are reported by User Trial site rather than by individual; 191 forms were returned, representing 11 sites. The overall mean CD-7 score for these 191 responses was 22.6 with a standard deviation of 5.8. Allowing for measurement error (SEM=0.42), the 95% confidence interval for CD-7 scores was from 21.8 to 23.4. This upper limit (23.4) is well below the criterion score of 30.

Ranges were similarly computed for each of the 11 sites. Only two sites had the value 30 within their 95% confidence intervals. The upper limit of CD-7 scores for Communication Skills at Vocational Village High School was 31.1; the upper limit for Mid-Management Trainee at Owen Sabin Occupational Skills Center was 30.0. All other sites were well below the cut-off point. CD-7 means and standard deviations for all sites are listed in Table 2.

Table 2
Summary of CD-7 Results for
User Trial of Mountain-Plains Curriculum

Site/Curriculum	Mean	S.D.	N
Roosevelt School District CA 66	18.6	3.4	5
Roosevelt School District CA 63	20.0	5.2	14
Kennedy Junior High School CA 81	24.8	4.6	17
North Salinas High School CA 63	19.6	4.8	17
North Salinas High School CA 15	24.7	6.3	13
Vocational Village High School CA 15	26.0	7.9	9
Vocational Village High School CA 27	21.5	3.5	6
Oregon State Correctional Institute CA 26	18.0	3.7	12
Oregon State Correctional Institute CA 51	17.2	4.2	37
Oregon State Correctional Institute CA 77	25.3	4.5	6
Owen Sabin Occupational Skills Center CA 27	27.4	3.8	55

The rather large differences from site to site resulted in an overall significance F value in an analysis of variance. With 10 and 180 degrees of freedom, an F value of 18.1 was obtained ($p < .01$). A Newman-Keuls test of pairwise differences was also conducted. Results are indicated in Table 3.

Table 3
Results of Newman-Keuls post hoc Analysis of CD-7

Site	C	K	B	E	J	G	D	F	H	A	I
C					*	*	*	*	*	*	*
K						*	*	*	*	*	*
B						*	*	*	*	*	*
E							*	*	*	*	*
J							*	*	*	*	*
G									*	*	*
D											*
F											*
H											
A											
I											

Site Legend:		
	A	Vocational Village High School CA 15
	B	Roosevelt School District CA 66
	C	Oregon State Correctional Institute CA 51
	D	North Salinas High School CA 15
	E	North Salinas High School CA 63
	F	Kennedy Junior High School CA 81
	G	Vocational Village High School CA 27
	H	Oregon State Correctional Institute CA 77
	I	Owen Sabin Occupational Skills Center CA 27
	J	Roosevelt School District CA 63
	K	Oregon State Correctional Institute CA 26

The asterisk in a given cell of Table 3 indicates that the [illegible]o sites heading the respective row and column were found to be significantly different in terms of CD-7 scores. Because sites are ranked from low to high, it is possible to tell from Table 3 that Roosevelt School District CA 66 (B) received more favorable ratings than Vocational Village High School CA 27 (G). Likewise, Site I got higher scores than Sites C, K, B, E, J, G, D, and F. Out of a total of 55 pairwise comparisons, 34 (62%) resulted in significant differences.

The major issue of whether or not students regard Mountain-Plains curriculum materials as good receives a very strong affirmative response. In specific cases, nine out of eleven sites offered uniform endorsement of curriculum materials, while two gave mixed reviews. There were significant variations from site to site; these will be discussed in connection with other research questions.

Question 3. Does the curriculum work better than other types of curriculum currently in use at sites? Instructors were asked to respond to this question via CD-3 and CD-4 evaluation questionnaires. Both forms were constructed in a manner similar to that of the CD-5 and CD-7. CD-3 is an evaluation of materials, while CD-4 is an evaluation of procedures. Each scale has 15 items arranged on a six-point Likert-type continuum. Possible score ranges on CD-3 and CD-4 are therefore 15-90; the cutoff point for acceptability was 45. All forms with scores 45 or higher were regarded as unfavorable.

Returns consisted of 15 usable CD-3 forms and 14 usable CD-4 forms. Mean CD-3 rating was 34.9 with a standard deviation of 11.4. The resultant 95% confidence interval (SEM=2.94) was from 29.2 to 40.7, well within the acceptable range. CD-4 returns yielded a mean of 41.9 and a standard deviation of 13.8 (SEM=3.69). The resultant confidence interval ranged from 34.7 to 49.1. This latter value places CD-4 results in the unfavorable range (45 or above).

The implication here is that while materials are good, procedures are faulty. Further investigation revealed that primary procedural problems involved too much material and too little time. Some instructors also noted that many of their students became bored during the long dry spells of written curriculum between occasional "hands-on" activities.

Question 1. Does the process get the content across? This question was addressed from several angles. Course and unit cognitive tests, unit performance tests, and evaluations from students and instructors were used. The results of Question 3 indicate that instructors were unimpressed by the Mountain-Plains procedure or process of instruction. Students, however, seem to think that the process is both simple and sound (see Questions 4 and 5). The major proof, of course, is in student performance. It was on this point that User Trial data returns seemed to break down. A very small portion of all tests expected from User Trial sites were actually returned. Therefore, all responses to Question 1 in terms of student performance must be guarded.

Only one set of performance tests was returned. For Oregon State Correctional Institute, Institutional Cook (CA 26) had a pass rate of 100% (tests were pass/fail). This site also posted a 92% pass rate on course post tests.

Performance at other sites ranged from zero to nearly perfect. On unit cognitive tests, the overall pass rate was 66.7%. This figure is somewhat misleading, however, since all students who failed a unit post test retested after a review period and passed. What the figure does indicate is that approximately half the students had to repeat cognitive post tests. These results only reflect performance in Family Core Curriculum, (CA 51, 61, 63, 66, 81) Food Services (CA 26), and Marketing & Distribution. No unit tests of any kind were received from Office Education (CA 24), Automotive (CA 37), or any of the Building Trades (CA 70, 73, 75, 76, 77).

Course tests had an overall pass rate of 61.7%. These tests were not readministered; therefore the figure 61.7% may be taken at face value. The same sites and curriculum areas represented in the unit test results were also represented in course test results. Because there were so few sites returning complete course test results, no comparisons of sites or curriculum areas was attempted. The same was true for unit tests.

If the non-performance of the many non-responding sites is regarded as an indication of curriculum failure, the figures for unit test performance and course test performance drop to 45.2% and 41.7%, respectively. Whether the 61.7% figure or the 41.7% figure is used, it is apparent that student performance with Mountain-Plains curriculum did not meet expectations (expected pass rate was 90%). In order to assess other possible effects, Questions 2, 8, and 9 were asked.

Question 2. Does the curriculum work better at Mountain-Plains or User Trial sites? Course test results at Mountain-Plains indicate that 44.3% achieve mastery on cognitive post tests. Since all curriculum areas included in User Trial were considered in this assessment, the figure 44.3% must be compared to the User Trial course test figure of 41.7%. Thus, at least in terms of cognitive post test results, Mountain-Plains and User Trial sites are nearly identical.

The relatively low figure (44.3%) for Mountain-Plains is largely attributable to an emphasis on unit performance tests as final examinations of proficiency. Students are not required to pass course post tests in order to complete the program. They are required to demonstrate proficiency on each and every unit performance test before being allowed to proceed to the next unit.

The major difference between Mountain-Plains and the various sites is in curriculum completion. User Trial Returns indicate that approximately 35% of User Trial students completed their assigned curriculum. The Mountain-Plains figure is nearly twice that figure with 69%.[2] It may thus be concluded that Mountain-Plains curriculum works better at Mountain-Plains than elsewhere.

Question 8. Is there a relationship between instructor perception of Mountain-Plains curriculum and student performance? Correlation coefficients were computed for CD-3 score vs. percentage of completers and for CD-4 score vs. percentage of completers. For CD-3 the correlation coefficient was .13, and .29 for CD-4. Neither coefficient was statistically significant ($p > .05$) for the sample sizes given (15 for CD-3 and 14 for CD-4). Therefore, it must be concluded that there is no relationship between instructor perception of Mountain-Plains curriculum and subsequent student performance.

Question 9. Are there differences in student achievement between places that do and do not use Mountain-Plains curriculum in accordance with orientation instructions? Stated another way, "Is there a relationship between instructor compliance and student performance?" An immediate response to this question, in terms of instructors who quickly dropped out of User Trial and the subsequent performance of their students, is "Yes." Rating CD-2 (compliance check list) performances as pass/fail and validating against completion rate, a biserial correlation of .67 is derived. This correlation is statistically significant ($p < .05$). Thus it can be safely concluded that instructor compliance to Mountain-Plains procedures is related to student performance.

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[2] M.B. Bunch, Summative Internal Evaluation of Mountain-Plains Components Volume I-Descriptive Characteristics; Chapter 6-Summary. Glasgow, MT: Mountain-Plains Press, 1976.

SUMMATIVE IMPLICATIONS

As with any project extended over time, 100% compliance and completion were neither expected nor obtained. A major contributing factor to drop-out was poor timing in some instances; that is, many instructors were informed by site administrators at the last possible moment that they would use Mountain-Plains curriculum materials rather than being given the opportunity to choose Mountain-Plains materials. This management approach, coupled with subsequent weak follow-through, may be held accountable for much of the noncompliance.

Subsequently, the fact that slightly more than half of all instructors were found to be in compliance with Mountain-Plains procedures may be seen as fairly positive. This finding, along with a continuous monitoring of site functions, indicates that the orientation provided to users was sufficient. One of the major obstacles facing instructors earnestly attempting to follow Mountain-Plains procedures was the amount of paperwork. This problem was made more serious because of the lack of clerical aides. The Mountain-Plains delivery system relies heavily on instructional aides. The paper work burden may have been responsible for the fact that instructors, while endorsing Mountain-Plains materials, responded rather unfavorably to the curriculum procedures.

Student performance at User Trial sites was amazingly similar to that of their Mountain-Plains counterparts in some respects. Test scores were very close. The major difference between Mountain-Plains students and User Trial students is in completion rate. That Mountain-Plains students complete curriculum requirements at twice the rate of User Trial students while performing little better on curriculum tests, is an indication that it is the system, rather than any specific curriculum component, that is important.

While this series of reports has been labelled "User Trial of Mountain-Plains Curriculum," it might well have been entitled "User Trial of Mountain-Plains System." The Mountain-Plains system works. The existence of a high positive correlation between instructor compliance and student performance is ample proof of this. The system should be easily exportable to other interested educational facilities. However, it is important to note that the Mountain-Plains curriculum and delivery system are transportable only to the extent that instructors and management personnel are committed to an individualized systems approach to teaching and learning, and to the Mountain-Plains system in particular.

APPENDIX A

CD FORMS

Mountain-Plains Education & Economic Development Program, Inc.
POST OFFICE BOX 3078 · GLASGOW AFB, MONTANA 59231 · TEL: (406) 524-6221

MOUNTAIN-PLAINS CURRICULUM MONITORING FORM CD-2

October, 1975

Teacher ______________________ Trial Site # __________

Date ____________ Grade Level ______ CA # ______ Other ________

QUESTIONS	RESPONSES Yes	 No
1. Are raw test scores logged on SPRs? Criterion: On a test sample of 10 scores, 9 are logged. (Job title level pre and post test scores are entered by the test center. Unit post and performance test scores are entered by the instructor. LAP test scores are entered by the student on answer sheets. Job title post test scores are entered on the SWP by the test center.)		
2. Are prevalidation procedures being followed? Criteria: a. SPRs contain prevalidation entry marks which match those on SWPs. b. No students are found involuntarily using LAPs that are marked on SPR as having been prevalidated. (Students may work in prevalidated LAPs when this is review following failure on performance test.)	a. b.	
3. Are students using LEGs? Criterion: 9 out of 10 randomly selected students can describe a LEG and report that they are using them.		
4. Are students using LAPs? Criterion: 9 out of 10 randomly selected students can relate their activities to a procedure on a specific LAP.		
5. Are students using LAPs as prescribed? Criterion: 9 out of 10 students observed proceed from one LAP to the next without instructor interaction, except where by necessity student tasks are not ordered the same as LAPs.		

ATTACHMENT J

MOUNTAIN-PLAINS CURRICULUM MONITORING FORM CD-2

QUESTIONS	RESPONSES	
	Yes	No
6. Does instructor-student interaction conform to Mountain Plains curriculum design? Criterion: Over a one hour observation period, a maximum of 5 minutes is spent interacting with all students at once.		
7. Is instructor available as a resource person? Criterion: 8 out of 10 randomly selected students report instructor is available to help them when needed within a reasonable length of time.		
8. Are LAP tests properly used? Criterion: Observation and/or student report indicates students are taking and scoring LAP tests themselves.		
9. Are Unit tests properly used? Criteria: a. All observed instances show performance tests administered before scoring of written tests.	a.	
b. All observed instances indicate that instructor is conducting both cognitive and performance tests in a manner which compels students to respond to test items without benefit of external information other than that prescribed by testing constraints.	b.	
10. Is test data being properly collected? Criteria: a. Written Unit test answer sheets attached to performance tests.	a.	
b. Both tests given at the same time.	b.	
c. LAP test answer sheets properly stored.	c.	
d. Course test answer sheets properly labeled as to pre and post.	d.	
e. All answer sheets collected and stored.	e.	
f. Answer sheets contain required information.	f.	

MOUNTAIN-PLAINS CURRICULUM MONITORING FORM CD-2

QUESTIONS	RESPONSES	
	Yes	No
11. Is the instructor observing all the guidelines for use of the SWP? Criteria:		
a. Data is recorded as a LAP (or unit if this is the smallest component required of that job title) is completed.	a.	
b. All information required by the form is entered in appropriate spaces.	b.	
12. Is the Student Progress Record being used as designed? Criteria:		
a. Students or instructional staff fill out identifying information completely, accurately and neatly.	a.	
b. Students fill in the first three columns as required.	b.	
c. Instructor initials the appropriate column at the termination of a learning segment, indicating accurate and timely conformity to instructions by students.	c.	
13. Are Curriculum Materials appropriately stored and used by students? Criterion: LAPs, LEGs and resource materials are kept in a place which is accessible to students.		
14. User trial data is properly collected? Criterion: Each CD-5 is keyed to the LAP, i.e., the complete file code number is listed on the CD-5.		

TOTAL /14

Mountain–Plains Education & Economic Development Program, Inc.

POST OFFICE BOX 3078 · GLASGOW AFB, MONTANA 59231 · TEL: (406) 524-6221

TEACHER EVALUATION OF LEARNING MATERIALS

CD-3

October, 1975

Teacher ______________________ Trial Site # ______________

Date ______________ Grade Level ______ CA # _____ Other ________

Directions:

On the lef-hand side of the page is a statement about the material that you may or may not agree with. Please mark the scale on the right side of the page with a check mark according to the following choices.

____	____	____	____	____	____	(only check one column per item)
1	2	3	4	5	6	

1. Means "I strongly agree with this statement about learning materials".

2. Means "I mostly agree with this statement about learning materials"

3. Means "I agree more than I disagree with this statement about learning materials".

4. Means "I disagree more than I agree with this statement about learning materials".

5. Means "I mostly disagree with this statement about learning materials".

6. Means "I strongly disagree with this statement about learning materials".

	Strongly Agree	Mostly Agree	Slightly Agree	Slightly Disagree	Mostly Disagree	Strongly Disagree
1. Objectives are stated in a way that that has meaning to students.	1	2	3	4	5	6
2. Objectives are written at the level of understanding of my student population.	1	2	3	4	5	6
3. Curriculum content is related to vocational needs for students.	1	2	3	4	5	6
4. The LAP tests are appropriate for the LAP objective.	1	2	3	4	5	6
5. The curriculum content is appropriately sequenced.	1	2	3	4	5	6
6. The learning materials are clear and concise.	1	2	3	4	5	6
7. The learning materials are easily understood by my students.	1	2	3	4	5	6
8. The unit level objectives are consistent with the LAP level objectives.	1	2	3	4	5	6
9. The performance tests are consistent with unit objectives.	1	2	3	4	5	6
10. Curricular materials are relevant to the stated objectives.	1	2	3	4	5	6
11. The curricular materials contain enough information so students know exactly what is expected of them.	1	2	3	4	5	6
12. The curriculum materials are well organized.	1	2	3	4	5	6

	Strongly Agree	Mostly Agree	Slightly Agree	Slightly Disagree	Mostly Disagree	Strongly Disagree
13. The curriculum materials allow for a maximum amount of independent study on the part of students.	1	2	3	4	5	6
14. The cognitive tests are consistent with unit objectives.	1	2	3	4	5	6
15. Extensive training is not required before an instructor can manage Mountain-Plains curriculum.	1	2	3	4	5	6

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TEACHER EVALUATION OF MOUNTAIN-PLAINS CURRICULUM PROCEDURES

CD-4 October, 1975

Teacher ______________________ Trial Site # __________

Date __________ Grade Level __________ CA # __________ Other ______

Directions:

On the left-hand side of the page is a statement about the material that you may or may not agree with. Please mark the scale on the right side of the page with a check mark according to the following choices.

___	___	___	___	___	___	(only check one column per item).
1	2	3	4	5	6	

1. Means "I strongly agree with this statement about curriculum procedures".

2. Means "I mostly agree with this statement about curriculum procedures".

3. Means "I agree more than I disagree with this statement about curriculum procedures".

4. Means "I disagree more than I agree with this statement about curriculum procedures".

5. Means "I mostly disagree with this statement about curriculum procedures".

6. Means "I strongly disagree with this statement about curriculum procedures".

	Strongly Agree	Mostly Agree	Slightly Agree	Slightly Disagree	Mostly Disagree	Strongly Disagree
1. Students appear to learn more using Mountain-Plains methods.	1	2	3	4	5	6
2. Students can cover more material per term using Mountain-Plains methods.	1	2	3	4	5	6
3. Competent teachers should have no trouble adjusting to Mountain-Plains curricular methods.	1	2	3	4	5	6
4. Students appear to be happier using Mountain-Plains curricular methods.	1	2	3	4	5	6
5. I have more time to spend with students who need individual attention.	1	2	3	4	5	6
6. Faster students are able to make exceptional progress.	1	2	3	4	5	6
7. Slower students are making more progress than expected.	1	2	3	4	5	6
8. I prefer using Mountain-Plains procedures.	1	2	3	4	5	6
9. M-P curriculum is more effective in helping students prepare for work after graduation.	1	2	3	4	5	6
10. Students find M-P curriculum materials less difficult with regard to reading levels required.	1	2	3	4	5	6
11. M-P curriculum appears to generate more student interest in learning.	1	2	3	4	5	6
12. I find students are more independent of the instructor using M-P curriculum.	1	2	3	4	5	6
13. Students find it easy to learn how to use M-P curriculum.	1	2	3	4	5	6

	Strongly Agree	Mostly Agree	Slightly Agree	Slightly Disagree	Mostly Disagree	Strongly Disagree
14. I find that I can make better professional use of my time using M-P curriculum.	___ 1	___ 2	___ 3	___ 4	___ 5	___ 6
15. If I had my choice, I would prefer to continue using M-P curricular procedures.	___ 1	___ 2	___ 3	___ 4	___ 5	___ 6

Mountain-Plains Education & Economic Development Program, Inc.

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STUDENT RESPONSE SHEET FOR LEARNING ACTIVITY PACKAGES

CD-5 October, 1975

Teacher ______________ Trial Site # ______________

Date __________ Grade Level __________ File Code # ______________

Directions:

This is to find out how you like this LAP. It may have been too difficult or you may not feel it is useful to you. Your opinion will help the Curriculum Department in knowing what kinds of changes the LAP needs. Please answer these few questions sincerely by marking the scale on the right side of the page with a check mark (only check one column per item).

	TRUE	MOSTLY TRUE	MOSTLY FALSE	FALSE
1. This LAP contained information which I feel is useful to me.	____	____	____	____
2. The materials necessary to complete this LAP were all available to me.	____	____	____	____
3. I was able to complete the LAP without seeking information from the instructor.	____	____	____	____
4. The LAP test really tested what was important in the LAP.	____	____	____	____
5. This LAP was easy for me to read and understand.	____	____	____	____

You may wish to make other remarks about the LAP, it's contents, the way they are used, the resource materials, etc. Please feel free to make these comments in the space below. Thank you for your reactions.

Additional Comments and Suggestions: ______________________________

____

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TRIAL SITE MONITORING FORM

CD-6

October, 1975

Amount and frequency of telephone contacts with trial sites are one indication of the quality of teacher orientation. Please log each phone call, indicating on the check-list the nature of the conversation. Use one sheet for each contact, filling in all the information blanks.

MOUNTAIN-PLAINS CONTACT PERSON: ______________________

SITE CONTACTED: ______________________

Site Person

Date: ______________________

PROBLEM AREA . . (CIRCLE AS APPLICABLE THE NUMBER)

1. Learning Experience Guides
2. Learning Activity Packages
3. LAP Tests
4. Unit Tests
5. Performance Tests
6. Data Retrieval
7. User Trial Instruments
8. Use of instruments (affective)
9. Student Progress Records
10. Other (specify)

Comment (s):

Mountain-Plains Education & Economic Development Program, Inc.

POST OFFICE BOX 3078 · GLASGOW AFB, MONTANA 59231 · TEL: (406) 524-6221

STUDENT EVALUATION OF CURRICULUM MATERIALS

CD-7

Form A October, 1975

In an attempt to improve our curriculum materials, Mountain-Plains is requesting your evaluation of those with which you have come in contact. To help us, please rate in the spaces below the curriculum material in your occupational area to the best of your ability and as honestly as possible. Check the blank that closest describes this material. Your answers will be treated confidentially.

Student Name ______________________ Trial Site # ________ Date ____________

Grade Level ________________ Course # ______________________________

Directions:

On the left-hand side of the page is a statement that may or may not be true of the material. Please mark the scale on the right side of the page with a check mark according to the following choices.

_____ _____ _____ _____ _____ _____ (only check one column per item).
1 2 3 4 5 6

1. Means "This statement is almost always true about the curriculum material I have used."
2. Means "This statement is mostly true about the curriculum material I have used."
3. Means "This statement tends to be more true than false with regard to the curriculum material I have used."
4. Means "This statement is false slightly more than half the time with regard to the curriculum material I have used."
5. Means "This statement is often false with regard to the curriculum material I have used."
6. Means "This statement is almost always false with regard to the curriculum material I have used."

The phrase "learning materials" refers to the books, LAPs, films, slides and other instructional materials you use in your occupational area.

	Almost Always True	Mostly True	More True Than Not	More False Than Not	Mostly False	Almost Always False
1. The learning materials do not contain words that are hard for me to understand.	___ 1	___ 2	___ 3	___ 4	___ 5	___ 6
2. The learning materials are easy for me to read.	___ 1	___ 2	___ 3	___ 4	___ 5	___ 6
3. The learning materials are easy to progress through.	___ 1	___ 2	___ 3	___ 4	___ 5	___ 6
4. The learning materials enable me to work on my own without a lot of assistance from the instructor.	___ 1	___ 2	___ 3	___ 4	___ 5	___ 6
5. The learning materials are necessary to what I am supposed to learn.	___ 1	___ 2	___ 3	___ 4	___ 5	___ 6
6. The learning materials tell me exactly what it is I need to know.	___ 1	___ 2	___ 3	___ 4	___ 5	___ 6
7. The learning materials are worthwhile.	___ 1	___ 2	___ 3	___ 4	___ 5	___ 6
8. The learning materials are related to the doing activities.	___ 1	___ 2	___ 3	___ 4	___ 5	___ 6
9. The learning materials are appropriate for my work.	___ 1	___ 2	___ 3	___ 4	___ 5	___ 6
10. The learning materials are more helpful to me than those I used in public school.	___ 1	___ 2	___ 3	___ 4	___ 5	___ 6

Additional Comments and Suggestions: ____

____

____

APPENDIX B

SITE PROFILES

SITE PROFILE

Oregon

LOCATIONS	CONTACT PERSON	JOB TITLE	INSTRUCTORS	NUMBER OF STUDENTS	NUMBER OF STAFF	AGE LEVEL	POPULATION CHARACTERISTICS	AVERAGE READING LEVEL
Oregon State Correctional Institution Salem	Gene Hilficker Educational Director	Basic Communication Skills	Bill Baird	15	1	20	Cultural Disadvantaged	9th Grade
		Advanced Communication Skills	"	"	"	"		"
		Health Education	Jake Hurlbert	30	1	20	"	"
		Carpenter	K. Brenden	12	1	20	"	"
		Refrigeration/Cooling	Frederick Kahrs	10	1	20	"	"
		Appliance Serviceman	Wayne Gerig	10	1	20	"	"
		Restaurant Cook	Kenneth Rogers	12	1	20	"	"
Vocational Village High School Portland	Lester Weber Admissions Assistant	Basic Communication Skills	Lynda Darling	10	1	14-20	Students are disadvantaged & handicapped released from compulsory education	Basic Education 6th-7th
		Advanced Communication Skills	"	"	"	"		"
		Mid-Management Trainee	Jerry Palmer	10	1	"		"
		Refrigeration/Cooling	Larry Sampson	10	1	"		"
		Appliance Serviceman	Bill Ussack	10	1	"		"
		Restaurant Cook	David Bailey	10	1	"	"	"
Owen Sabin Occupational Skill Center Milwaukie	Robert Crain Principal	Carpenter	Hugh Malone Verl Cranmer	80 Furnishing Materials for 40	1	15-18	Average High School Students	High School
		Plumber		"	1	"	"	"
		Mid-Management Trainee	Mark Newman	25	1	"	"	"
			Katie Killen	35	1	"	"	"

Suggested Preservice Dates:

1st Alternate Date: September 2, 1975 (a.m. session and p.m. session)

2nd Alternate Date:

State Contact Person James W. Hargis

Date: Revised October 20, 1975

SITE PROFILE

Arizona

LOCATIONS	CONTACT PERSON	JOB TITLE	INSTRUCTORS	NUMBER OF STUDENTS	NUMBER OF STAFF	AGE LEVEL	POPULATION CHARACTERISTICS	AVERAGE READIN LEVEL
Kennedy Jr. High School Rossevelt District Phoenix	Shirley Iaquinto Coordinator, Career Education	Home Management Leadership Training Consumer Education	Nadine Svob Connie Honaker Ruth McGuffie	20 20 20	5	(13-15)	Multi-cultural innercity, Jr. High School	6th-8th Grade
Palmdale Elementary	Martha Clark Director, Funded Programs	Parent Involvement	?	6	1	(20-60) Adult	Parents of multi-cultural, lower socio economic elementary school children	7th to Adult
Rose Linda Elementary		Parent Involvement	?	6	1			
Rio Vista Elementary Phoenix		Parent Involvement	?	6	1			
Santa Cruz Careers	Dr. Jerry Booth Director, Santa Cruz Careers	Health Education	Roxanna Capin Victor Paredes	10	1	25-45	Mexican-American border town, rural adult	7th to College
	Sue Jones Coordinator	Parent Involvement	Helen Paredes Mary Lou Garcia	10	1			

Suggested Preservice Dates: ____________________

1st Alternate Date: October 9 and 10

2nd Alternate Date: ____________________

State Contact Person Dr. Norma Richardson

Date: Revised October 20, 1975

SITE PROFILE

California

LOCATIONS	CONTACT PERSON	JOB TITLE	INSTRUCTORS	NUMBER OF STUDENTS	NUMBER OF STAFF	AGE LEVEL	POPULATION CHARACTERISTICS	AVERAGE READIN LEVEL
Retail Merchandising Center Salinas	Robert Bilek Assistant Director of Career Education	Mid-Management Trainee	Ilene Hylton	10	1	15-18	Multi-Cultural Mexican-American 27%	9th Grade
Washington Jr. High Salinas	Robert Bilek Assistant Director of Career Education	Restaurant Cook	Mel Abdelaziz	10	1	15-18	Multi-Cultural (continuing education students)	9th Grade
Auto Center Salinas	Robert Bilek Assistant Director of Career Education	General Mechanic	John Viarengo	20	1	16-18	Multi-cultural	7th Grade

Suggested Preservice Dates:
1st Alternate Date: October 1, 1975
2nd Alternate Date:

State Contact Person Dr. Ken Densley
Date: Revised October 20, 1975

SITE PROFILE

California (continued)

LOCATIONS	CONTACT PERSON	JOB TITLE	INSTRUCTORS	NUMBER OF STUDENTS	NUMBER OF STAFF	AGE LEVEL	POPULATION CHARACTERISTICS	AVERAGE READIN LEVEL
North Salinas High School	Robert Bilek	Basic Communication Skills	Darlene Andreotti	20	1	15-16	Multi-cultural	9th Grade
		Advanced Communication	"	20	1	"	"	"
	Assistant Director of Career Education	Home Management	Pauline Gist	20	1	15-17	"	"

Suggested Preservice Dates: __________

1st Alternate Date: __________

2nd Alternate Date: __________

State Contact Person __________

Date: Revised October 20, 1975

Montana

LOCATIONS	CONTACT PERSON	JOB TITLE	INSTRUCTORS	NUMBER OF STUDENTS	NUMBER OF STAFF	AGE LEVEL	POPULATION CHARACTERISTICS	AVERAGE READIN LEVEL
Glasgow High School Glasgow Montana		Bookkeeper Checker-Cashier	Cactus Warner Pat Baker	30 ?	2	15-17	Rural High School	11th Grade

Suggested Preservice Dates: ____________

1st Alternate Date: ____________

2nd Alternate Date: ____________

State Contact Person Bob England

Date: Revised October 20, 1975

A REGIONAL PROGRAM IN
COMPREHENSIVE FAMILY EDUCATION

STUDENT EVALUATION OF STAFF

JULY 1976

BOX 3078 GLASGOW AFB, MONTANA 59231

MOUNTAIN-PLAINS EDUCATION ECONOMIC DEVELOPMENT PROGRAM INC.

STUDENT EVALUATION OF STAFF

Author:

Michael B. Bunch
Tests & Measurement Specialist

July 1976

This Study is a Product of
Research Services Division

David A. Coyle, Director

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INTRODUCTION TO INSTRUCTIONAL/CURRICULUM EVALUATION REPORT SERIES

Instructional/Curriculum Evaluation constitutes one aspect of the evaluative process of Mountain-Plains. Reports in this series, together with reports from External and Affective evaluation series, will provide a thorough documentation of the processes and products of Mountain-Plains. Major subdivisions of the series include:

1. User Trial Reports
2. Descriptive Characteristics
3. Summative Analysis
4. Reliability and Validity Studies
5. Student Evaluation of Staff and Curriculum

Individual reports in each series are currently available from, or are in the process of being incorporated into, the ERIC retrieval system. By the conclusion of the NIE research cycle, Instructional/Curriculum Evaluation Reports will number about 40 or 50. Many reports span two or more areas. These include overall internal evaluation reports and reports on the effects of affective variables on cognitive performance.

The reader of individual Mountain-Plains documents should keep in mind that a report takes on full significance only in relation to its report series and the overall research program, and that the reader typically finds frequent reference to earlier reports. While each report is designed to have independent value, such "series dependence" is an inescapable aspect of any systematic program research, and requires some indulgence on the part of the reader.

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STUDENT EVALUATION OF STAFF

INTRODUCTION

All Mountain-Plains student-contact personnel are periodically evaluated by the students with whom they work. The purpose of the present report is to summarize the evaluations received during the final year of the research and development phase of the program. Instructors, counselors, career guidance specialists, and state coordinators are considered.

METHOD

Participants. Participants were all instructors, counselors, career guidance specialists, state office personnel, and the 361 students entering the program between 1 December 1974 and 31 July 1975. These students are collectively referred to as the Mountain-Plains stabilization population. All program development had taken place prior to their arrival, and no changes in any program component were allowed which could affect any stabilization population student.

Instruments. Four separate evaluation forms were devised. These were Student Evaluation of Staff Forms A, B, C, and D (SES-A, SES-B, SES-C, and SES-D). Each form has been described in detail by Pollack (Pollack, 1975 a, b, c, d), but a brief exposition on each is offered here.

SES-A is the instructor evaluation form. This form was developed in 1974 and originally contained 35 items. Each item was a statement followed by a six-point Likert type agreement scale (ranging from "Almost Always True" to "Almost Always False"). Students indicated the variety of a particular statement by checking the appropriate space.

The form was analyzed by the method of categorical judgement (Thurstone, 1927; Torgerson, 1958). This process ultimately produced two internally homogeneous ten-item scales. Scale 1 contained items pertaining to instructor-student relations and was labelled Rapport. Scale 2 was clearly made up of instructor skill items and was called Competence. Internal consistency (reliability) coefficients for both scales were very high, .97 for Scale 1 and .95 for Scale 2.

SES-B has a history similar to that of SES-A. Originally constructed in 1974 of 35 counselor evaluation items, the form was subjected to scaling techniques which produced three ten-item scales. These scales were labelled Comfort (Scale 1), Competence (Scale 2), and Encouragement (Scale 3). Scale reliabilities were .96, .95, and .93 for Scales 1, 2, and 3, respectively.[1]

SES-C is a 35-item form assessing student opinion of career guidance specialists. This form was developed in a manner identical to that of SES-A and SES-B. Its three scales are named Rapport (Scale 1), Professional Competence (Scale 2), and Interpersonal Skills (Scale 3). Scale reliabilities are .94 (Scale 1), .94 (Scale 2), and .89 (Scale 3).[2]

SES-D was developed by Pollack (1975 d) as an objective means of assessing performance of state coordinators. The method of categorical judgement yielded three scales of ten items each from the original 35 items. Scale 1 is labelled Affect because it deals primarily with how much the student likes the coordinator and has a reliability of .92. Scale 2 measures coordinator Interest and has a reliability of .92. Scale 3, a measure of Competence, has a reliability of .89.

---

[1] Pollack, 1975 (b).

[2] Pollack, 1975 (c).

Unreliable or unscalable items on each form were revised or deleted. The present SES-A form contains only 20 items. Other forms still contain 35 items. All four forms, as well as the scales, are included in Appendix A.

Procedure. The purpose of utilizing only stabilization population students in this study was to enable investigators to measure student perceptions of a known entry, i.e., a stabilized, documented program. All evaluation forms were administered and collected at the Test Center in order to insure uniformity of conditions and instructions. Instructor evaluations (SES-A) were administered to each student as he or she completed a particular curriculum area. Career Guidance evaluations (SES-C) were given at the end of career guidance activities. Forms SES-B and SES-D (Counselor and State Coordinator) were administered as the student exited the program. All forms were collected by Test Center personnel, coded, keypunched, and analyzed.

A pair of computer programs, RCLUS and XVAL, have been developed especially for Mountain-Plains staff evaluations. Both are based on Thurstone's (1927) general law of comparative judgement. RCLUS is designed to cluster items into internally homogeneous groups of items. This was the procedure followed by Pollack (1975 a, b, c, d) in the development of the forms. XVAL responds to commands specifying the number of items on the form, the number of scales, the number of items in each scale, and the location (item number) of each scale item on the form. Output of XVAL is in terms of scale scores. Form SES-A yields two scale scores for each individual, whereas, the other three forms yield three scale scores each.

Since each item has a score range of 1 to 6, and each scale has ten items, scale score ranges are 10-60. Lower scores are more favorable than higher scores. A score of 30 was set as a criterion on each scale. All scores at or above this mark were considered unfavorable, and all scores below were considered favorable.

Although the scores obtained through XVAL are individual (student) scale scores, the variable of interest is the staff score. Therefore, all evaluations for a particular instructor, counselor, career guidance specialist, or state coordinator were summed. The resultant mean and standard deviation were the basic data used in further analysis. Standard errors of measurement (SEM) were also computed. The decision rule for all evaluations was "If the scale score mean ±1.96 SEM contains the value 30 or any value above 30, that set of evaluations is regarded as unfavorable." This was a somewhat conservative rule in that a staff member with a scale score mean of less than 30 could actually end up with an unfavorable rating if his or her scale score range (mean ±1.96 SEM) extended to 30 or above. The reason for such a conservative rule was to allow investigators to conclude with 95% certainty that a favorable set of evaluations did indeed represent favorable opinion rather than chance.

All instructors were compared to one another on both scales (Rapport and Competence). All other staff were compared to their colleagues on three scale scores; no Career Guidance Specialist, for example, was compared to any Counselor. The method of comparison was analysis of variance (ANOVA). Where significant overall differences were found, pairwise differences were sought by the Newman-Keuls method of *post hoc* analysis.

RESULTS

Instructors

A total of 1,242 evaluations were received. Generally, student opinion of instructors was extremely favorable. Scale 1 (Rapport) had a mean of 18.8 and a standard deviation of 11.0. The resultant SEM was 0.31. Scale 2 (Competence) had a mean of 17.7 and a standard deviation of 9.0. The resultant standard error of measurement was 0.26. Thus the scale score ranges, allowing for measurement error (95% confidence interval), were 18.2-19.4 for Scale 1 and 17.2-18.2 for Scale 2. These ranges are so far below 30 that it can be concluded with greater than 99.9% confidence that students generally find instructors easy to work with and competent. Scale score means and standard deviations for each curriculum area are contained in Table 1.

Table 1

Summary of Student Evaluation of Instructors
by Curriculum Area

	Scale 1		Scale 2	
Curriculum Area	Mean	S.D.	Mean	S.D.
Mathematics Skills	19.8	9.7	21.9	10.6
Communication Skills	22.2	11.6	25.9	13.4
Office Education	16.3	10.0	16.7	9.1
Marketing & Tourism	15.4	5.8	15.7	5.6
Mobility & Transportation	26.6	17.7	24.3	14.3
Health Education	13.7	5.5	16.1	6.4
Consumer Education	25.9	14.8	23.3	12.4
Home Management	17.7	8.9	19.0	8.4
Parent Involvement	17.5	8.3	19.4	8.1
Building Trades	17.4	8.7	16.3	7.2

Analysis of variance yielded significant F values for both scales. With 9 and 1222 degrees of freedom, F values were 25.5 ($p < .01$) for Scale 1 and 13.9 ($p < .01$) for Scale 2. Newman-Keuls *post hoc* analyses revealed 32 significant pairwise differences on Scale 1 and 33 on Scale 2 (there were a total of 45 possible comparisons). Tables 2 and 3 summarize these differences. An asterisk in a given cell indicates that the two curriculum areas forming the cell differed significantly from each other in terms of scale score means. Curriculum areas are arranged from most to least favorable and rank is noted in parenthesis.

Table 2
Significant Pairwise Differences on SES-A

Scale 1

Curriculum Area	(Rank)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Health Education	(1)			*	*	*	*	*	*	*	*
Marketing & Tourism	(2)							*	*	*	*
Office Education	(3)							*	*	*	*
Home Management	(4)								*	*	*
Building Trades	(5)							*	*	*	*
Parent Involvement	(6)							*	*	*	*
Mathematics Skills	(7)								*	*	*
Communication Skills	(8)									*	*
Consumer Education	(9)										
Mobility & Transportation	(10)										

Table 3
Significant Pairwise Differences on SES-A

Scale 2

Curriculum Area	(Rank)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Marketing & Tourism	(1)					*	*	*	*	*	*
Health Education	(2)					*	*	*	*	*	*
Building Trades	(3)					*	*	*	*	*	*
Office Education	(4)					*	*	*	*	*	*
Home Management	(5)								*	*	*
Parent Involvement	(6)								*	*	*
Mathematics Skills	(7)									*	*
Consumer Education	(8)										*
Mobility & Transportation	(9)										
Communication Skills	(10)										

As Table 2 indicates, the Health Education instructor was perceived by students as having significantly better rapport with students than nearly all other instructors. The Consumer Education instructor and Mobility & Transportation instructors, on the other hand, were perceived as significantly inferior to most instructors with respect to this quality. Table 3 indicates a very clear split; instructors in Marketing & Tourism, Health Education, Building Trades, and Office Education were generally perceived by students to be more competent than instructors in Home Management, Parent Involvement, Mathematics Skills, Consumer Education, Mobility & Transporation, and Communication Skills.

In general, however, student perceptions of instructors are very favorable. Only two instructional areas, Communication Skills and Mobility & Transportation, are in need of any upgrading. In these two areas the problem of instructors rapport and competence is somewhat minor, and, in fact, some improvement has begun in Mobility & Transportation.

Counselors

Fourteen conselors received a total of 206 student evaluations. Student opinion was generally very favorable. Scale score means were 19.7 (Comfort; S.D.=11.8), 19.4 (Competence; S.D.=12.0), and 19.6 (Encouragement; S.D.=11.0). Allowing for measurement error, the reliably interpretable score mean for Scale 1 was between 18.1 and 21.3; between 17.8 and 21.0 for Scale 2, and between 18.1 and 21.1 for Scale 3. These scores are all clearly below 30. Thus it may be safely concluded that student opinion of counselors was generally very favorable.

No counselor has scale score means above 30, and only one counselor had score ranges which included the value 30. This counselor, however, received only five evaluations, two unfavorable and three very favorable. The wide variation and small number of observations resulted in extremely large standard errors. The 95% confidence intervals for this counselor were 15.5-40.0 for Scale 1, 13.3-41.0 for Scale 2, and 13.8-43.0 for Scale 3. The other thirteen counselors all received very favorable evaluations on all three scales.

There appears to be but one factor involved in student evaluations of counselors. Scale intercorrelations were extremely high; product movement correlations were .97 for Scale 1 *vs*. Scale 2, .96 for Scale 1 *vs*. Scale 3, and .95 for Scale 2 *vs*. Scale 3. Thus counselors who are favorably perceived in terms of comfort are also favorably perceived in terms of competence and encouragement.

There were very few major differences among counselors on any scale (only eight counselors were considered for comparisons due to small sizes for the other six; one of the six not considered had the least favorable ratings on each scale). Overall F values for the three scales were 2.15 ($p < .05$), 2.10 ($p < .05$), and 1.31 (not significant) for Scales 1, 2, and 3, respectively. In *post hoc* analyses, only two significant pairwise differences (out of a possible total of 21) were detected for Scale 1 scores; only one difference was noted for Scale 2 scores. It may thus be concluded that not only are counselors generally very favorably perceived by students, but that this perception is consistent from counselor to counselor.

Career Guidance Specialists

Ten career guidance specialists received a total of 235 evaluations. Two specialists received one evaluation each, and one specialist had only three; therefore, these three individuals and their five evaluations are not considered in any computations or comparisons. The three scales, Rapport, Professional Competence, and Interpersonal Skills, had score means of 17.3, 17.9, and 17.1, respectively. Standard deviations were 10.0, 9.9, and 8.9 for Scales 1, 2, and 3, respectively. True scale score means lay somewhere between 16.0 and 18.6 for Scale 1, 16.7 and 19.2 for Scale 2, and between 16.0 and 18.3 for Scale 3. These score intervals are far enough below 30 to allow one to conclude with at least 99.9% confidence that student opinion of career guidance rapport, competence, and interpersonal skills (as measured by SES-C) is very favorable.

There was also a tendency for career guidance evaluations to covary. Interscale correlations were .95 (r_{12}) and .93 (r_{13}, r_{23}). These values are almost as high as the various scale internal consistency coefficients. As was the case with counselor evaluations (SES-B), evaluations of career guidance specialists may amount to responses to one evaluative factor.

Significant differences among specialists were found for each scale. F values were 5.02 for Scale 1 ($p < .01$), 5.89 for Scale 2 ($p < .01$), and 5.52 for Scale 3 ($p < .01$). There were 21 possible pairwise comparisons on each scale. There were 11 significant differences on Rapport, 14 differences on Professional Competence, and 10 differences on Interpersonal Skills. Thus, even though all three scales appear to measure the same entity (as shown by the high interscale correlations), Scale 2 (Professional Competence) appears to be the most discriminating scale and therefore the most useful.

Career guidance specialists may be regarded as doing a very good job, at least as far as students are concerned. All scale score means were within boundaries set a priori. For any given specialist, student opinion seems to be very consistent. Among specialists there is a great deal of variability with respect to student responses on all three scales of SES-C. Specialists are most clearly differentiated in terms of competence rather than either of the two more affective dimensions addressed by the form used.

State Coordinators

Coordinators in the six state area served by Mountain-Plains received 110 evaluations. Opinion was generally very favorable; all scale score means were below 30 as were all three confidence intervals. This was not universally true, however. Two states, Nebraska and Montana, had enough unfavorable evaluations on each scale to cause confidence intervals to extend above 30. Table 4 contains the means and standard deviations on each scale for each state.

Table 4
Summary of Student Evalutions of State Coordinators
by State

	Scale 1		Scale 2		Scale 3	
State	Mean	S.D.	Mean	S.D.	Mean	S.D.
South Dakota	17.5	10.1	21.9	13.0	18.8	8.6
North Dakota	20.9	13.9	21.4	13.6	19.5	13.0
Idaho	17.1	8.8	19.9	10.1	17.2	8.7
Nebraska	25.0	8.0	30.4	12.0	24.6	9.5
Wyoming	17.4	7.8	19.7	9.9	18.4	8.2
Montana	24.0	15.4	25.7	16.4	24.6	14.4

Despite the apparently rather large differences among states, no significant differences were found on any of the three scales. F values (with 5 and 104 degrees of freedom) were 1.65 for Scale 1 (Affect), 1.44 for Scale 2 (Interest), and 1.54 for Scale 3 (Competence). There tends to be greater variation within any given state than among states.

SUMMATIVE IMPLICATIONS

Student evaluations of staff were generally quite favorable. In only a few instances were there enough unfavorable evaluations to cause confidence intervals to exceed the cutoff, and there was only one incident of a scale score mean actually exceeding 30.

Evaluation forms used in the investigation proved to be very reliable if not somewhat redundant in cases (primarily SES-B and SES-C). The information taken from the forms has been very useful in pinpointing problem areas as well as areas in which individuals are performing admirably.

Instructors are generally perceived to be easy to work with and competent. The Mobility & Transportation staff has had close to 100% turnover during the past year, and new instructors appear to be better liked as well as more competent than former staff. Consumer Education is also currently the object of reorganization. Much of the change taking place in the program at present has been precipitated, at least in part, by student evaluations.

Counselors and career guidance specialists are likewise considered very competent by students. Although both groups received very favorable ratings from students, the lack of variability of ratings among counselors deserves further investigation. The lack of variability, coupled with the high interscale correlations of SES-B, is evidence of a lack of sophistication on the part of the students. ("Lack of sophistication" is not meant to be a derogatory phrase, but rather an indication of the lack of previous contact with counselors and a concomitant lack of a point of reference for counselors. The product of counseling is also somewhat less tangible than the product of instruction, career guidance, or that of state coordinators.) While Form SES-C also appears to measure only one dimension, it yields very reliable discriminations among career guidance specialists. The one dimension here appears to be satisfaction with career choice rather than the somewhat nebulous liking dimension apparently measured by SES-B (counselor evaluation form).

The effects of one malfunctioning member are more noticeable, because the state office staff is smaller than the instructional staff or any other staff evaluated by students. The evaluations of Nebraska and Montana state coordinators are cause for concern. Although not statistically different from other state staff, the absolute values of the evaluations for the staffs from these states were poor. The primary factor negating inter-state differences was the great amount of variability of evaluations received by any one state staff.

Given these few exceptions, student evaluations of staff were very encouraging. Those who are in a good position to know, that is, students, have given the entire staff a general vote of confidence. Due to the previous work of Pollack (1975 a, b, c, d), we can be reasonably assured that these perceptions are accurate.

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Appendix A

Student Evaluation of Staff Forms

STUDENT EVALUATION OF STAFF

Form A

In an attempt to improve our staff, Mountain-Plains is requesting your evaluation of the staff with whom you have come in contact. To help us, please rate in the spaces below the staff member whose name appears on the next page to the best of your ability and as honestly as possible. Check the blank that closest describes this staff member. Your answers will be treated confidentially, and the instructor you are evaluating will not see this form or be informed of your specific answers.

Directions

On the left-hand side of the page is a statement that may or may not be true of your instructor. Please mark the scale on the right side of the page with a check mark according to the following choices:

______ ______ ______ ______ ______ ______ (only check one column
1 2 3 4 5 6 per item)

1. Means "This statement is almost always true about my instructor."
2. Means "This statement is mostly true about my instructor."
3. Means "This statement tends to be more true than false with regard to my instructor."
4. Means "This statement is false slightly more than half the time with regard to my instructor."
5. Means "This statement is often false with regard to my instructor."
6. Means "This statement is almost always false with regard to my instructor."

Name of Instructor being Evaluated

Occupational Area

Name of Student

Date of Evaluation

Family Pay Number

Sex: Male Female
(circle one)

	Almost Always True	Mostly True	More True Than Not	More False Than Not	Mostly False	Almost Always False
1. My relationship with my instructor helps me to feel that I made the right decision by coming to Mountain-Plains.	1	2	3	4	5	6
2. My instructor makes my work at Mountain-Plains more enjoyable.	1	2	3	4	5	6
3. My instructor sets a good example for the students to follow.	1	2	3	4	5	6
4. My instructor helps make my work interesting.	1	2	3	4	5	6
5. My instructor treats me like an adult.	1	2	3	4	5	6
6. I like my instructor as a person.	1	2	3	4	5	6
7. My instructor is the kind of person I would choose for a friend.	1	2	3	4	5	6
8. My instructor is considerate of the feelings of the students in my area in general.	1	2	3	4	5	6
9. My instructor is considerate of my feelings.	1	2	3	4	5	6

	Almost Always True	Mostly True	More True Than Not	More False Than Not	Mostly False	Almost Always False
10. My instructor accepts me as an individual.	1	2	3	4	5	6
11. My instructor keeps me informed about overall changes in the Mountain-Plains Program which affect me.	1	2	3	4	5	6
12. My instructor explains Mountain-Plains policies and procedures which affect me.	1	2	3	4	5	6
13. My instructor encourages me to think about my future.	1	2	3	4	5	6
14. My instructor encourages me to work hard.	1	2	3	4	5	6
15. My instructor encourages me to improve in those areas where I have faults.	1	2	3	4	5	6
16. My instructor encourages me to make full use of my time here.	1	2	3	4	5	6
17. My instructor corrects improper student behavior when it occurs.	1	2	3	4	5	6
18. My instructor is able to give me good advice about the job market in my area.	1	2	3	4	5	6
19. I can understand my instructor when he explains something to me.	1	2	3	4	5	6
20. My instructor has a thorough knowledge of the subject he/she teaches.	1	2	3	4	5	6

Please use the following spaces to include your feelings of the Instructor not covered by the statements on this form:

Areas in which the Instructor does well (please be specific):

____

____

____

____

____

____

Areas in which the Instructor could use some improvement:

____

____

____

____

____

____

Scale 1 - Rapport

Order of Entry	Item
1	My relationship with my instructor helps me to feel that I made the right decision by coming to Mountain-Plains.
2	My instructor makes my work at Mountain-Plains more enjoyable.
3	My instructor sets a good example for the students to follow.
4	My instructor helps make my work interesting.
5	My instructor treats me like an adult.
6	I like my instructor as a person.
7	My instructor is the kind of person I would choose for a friend.
8	I would enjoy associating with my instructor on a social basis.
9	My instructor is considerate of my feelings.
10	My instructor accepts me as an individual.

Scale 2 - Competence

Order of Entry	Item
1	My instructor keeps me informed about overall changes in the Mountain-Plains Program which affect me.
2	My instructor explains Mountain-Plains policies and procedures which affect me.
3	My instructor encourages me to think about my future.
4	My instructor encourages me to work hard.
5	My instructor encourages me to improve in those areas where I have faults.
6	My instructor encourages me to make full use of my time here.
7	My instructor corrects improper student behavior when it occurs.
8	My instructor is able to give me good advice about the job market in my area.
9	I can understand my instructor when he explains something to me.
10	My instructor has a thorough knowledge of the subject he/she teaches.

STUDENT EVALUATION OF STAFF

Form B

In an attempt to improve our staff, Mountain-Plains is requesting your evaluation of the staff with whom you have come in contact To help us, please rate in the spaces below the staff member whose name appears on the next page to the best of your ability and as honestly as possible. Check the blank that closest describes this staff member. Your answers will be treated confidentially, and the instructor you are evaluating will not see this form or be informed of your specific answers.

Directions

On the left-hand side of the page is a statement that may or may not be true of your counselor. Please mark the scale on the right side of the page with a check mark according to the following choices:

_____ _____ _____ _____ _____ _____ (only check one column per item)
1 2 3 4 5 6

1. Means "This statement is almost always true about my counselor."
2. Means "This statement is mostly true about my counselor."
3. Means "This statement tends to be more true than false with regard to my counselor."
4. Means "This statement is false slightly more than half the time with regard to my counselor."
5. Means "This statement is often false with regard to my counselor."
6. Means "This statement is almost always false with regard to my counselor."

____
Name of Counselor being Evaluated

____
Number of Months you have Worked with the Counselor

____
Name of Student

____
Date of Evaluation

____
Name of Job I am Training For

	Almost Always True	Mostly True	More True Than Not	More False Than Not	Mostly False	Almost Always False
1. My counselor encourages me.	____ 1	____ 2	____ 3	____ 4	____ 5	____ 6
2. My counselor makes me feel I am important.	____ 1	____ 2	____ 3	____ 4	____ 5	____ 6
3. My counselor encourages me in my efforts to improve in those areas where I have faults.	____ 1	____ 2	____ 3	____ 4	____ 5	____ 6
4. My counselor encourages me to make full use of my time here.	____ 1	____ 2	____ 3	____ 4	____ 5	____ 6
5. My counselor appears to enjoy his/her work.	____ 1	____ 2	____ 3	____ 4	____ 5	____ 6
6. My counselor treats me like an adult.	____ 1	____ 2	____ 3	____ 4	____ 5	____ 6
7. I would enjoy associating with my counselor on a social basis.	____ 1	____ 2	____ 3	____ 4	____ 5	____ 6
8. My counselor explains Mountain-Plains policies and procedures which affect me.	____ 1	____ 2	____ 3	____ 4	____ 5	____ 6
9. My counselor answers my questions rather than referring me to someone else. He doesn't "pass the buck."	____ 1	____ 2	____ 3	____ 4	____ 5	____ 6

	Almost Always True	Mostly True	More True Than Not	More False Than Not	Mostly False	Almost Always False
10. My counselor does not discriminate against me because of race.	1	2	3	4	5	6
11. My counselor respects what I have to say.	1	2	3	4	5	6
12. My counselor makes my stay at Mountain-Plains more enjoyable.	1	2	3	4	5	6
13. My relationship with my counselor helps me to feel comfortable with my decision to attend Mountain-Plains.	1	2	3	4	5	6
14. My counselor is competent.	1	2	3	4	5	6
15. My counselor encourages me to think about my future.	1	2	3	4	5	6
16. The materials and techniques that are used are able to get the point across to me.	1	2	3	4	5	6
17. My counselor refers me to appropriate sources for specialized information.	1	2	3	4	5	6
18. My counselor is patient with me.	1	2	3	4	5	6
19. When tests were used, the purpose was adequately explained.	1	2	3	4	5	6
20. I like my counselor as a person.	1	2	3	4	5	6

	Almost Always True	Mostly True	More True Than Not	More False Than Not	Mostly False	Almost Always False
21. My counselor tries different ways to help me with my problems.	____ 1	____ 2	____ 3	____ 4	____ 5	____ 6
22. My counselor is considerate of my feelings.	____ 1	____ 2	____ 3	____ 4	____ 5	____ 6
23. My counselor does not take sides but treats all points fairly in group and/or marriage counseling.	____ 1	____ 2	____ 3	____ 4	____ 5	____ 6
24. My counselor makes me feel good when I accomplish a difficult task.	____ 1	____ 2	____ 3	____ 4	____ 5	____ 6
25. My counselor gives me feedback on my progress.	____ 1	____ 2	____ 3	____ 4	____ 5	____ 6
26. My counselor is the kind of person I would choose for a friend.	____ 1	____ 2	____ 3	____ 4	____ 5	____ 6
27. My counselor gives my opinions a fair hearing in negotiating counseling involvement and validation.	____ 1	____ 2	____ 3	____ 4	____ 5	____ 6
28. My counselor helps me deal with my faults.	____ 1	____ 2	____ 3	____ 4	____ 5	____ 6
29. My counselor explains overall counseling objectives in ways that are meaningful to me.	____ 1	____ 2	____ 3	____ 4	____ 5	____ 6
30. I can understand my counselor when he explains something to me.	1	2	3	4	5	6
31. My counselor accepts me as an individual.	____ 1	____ 2	____ 3	____ 4	____ 5	____ 6

	Almost Always True	Mostly True	More True Than Not	More False Than Not	Mostly False	Almost Always False
32. My counselor is helpful when I have personal or family problems.	1	2	3	4	5	6
33. My counselor can be trusted.	1	2	3	4	5	6
34. My counselor sets a good example for the students to follow.	1	2	3	4	5	6
35. My counselor helps me to see the practical advantages of counseling.	1	2	3	4	5	6

Additional Comments and Suggestions: ______________________________

____

____

____

____

Is this the counselor you work with most of the time? Yes____ No____

Scale 1 - Comfort

Order of Entry	Original Item Number	Item
1	29	My counselor explains overall counseling objectives in ways that are meaningful to me.
2	28	My counselor helps me deal with my faults.
3	24	My counselor makes me feel good when I accomplish a difficult task.
4	27	My counselor gives my opinions a fair hearing in negotiating counseling involvement and validation.
5	13	My relationship with my counselor helps me to feel comfortable with my decision to attend Mountain-Plains.
6	12	My counselor makes my stay at Mountain-Plains more enjoyable.
7	22	My counselor is considerate of my feelings.
8	34	My counselor sets a good example for the students to follow.
9	18	My counselor is patient with me.
10	23	My counselor does not take sides but treats all points fairly in group and/or marriage counseling.

Scale 2 - Competence

Order of Entry	Original Item Number	Item
1	26	My counselor is the kind of person I would choose for a friend.
2	7	I would enjoy associating with my counselor on a social basis.
3	20	I like my counselor as a person.
4	14	My counselor is competent.
5	9	My counselor answers my questions rather than referring me to someone else. He doesn't "pass the buck."
6	6	My counselor treats me like an adult.
7	33	My counselor can be trusted.
8	31	My counselor accepts me as an individual.
9	30	I can understand my counselor when he explains something to me.
10	35	My counselor helps me to see the practical advantages of counseling.

Scale 3 - Encouragement

Order of Entry	Original Item Number	Item
1	3	My counselor encourages me in my efforts to improve in those areas where I have faults.
2	1	My counselor encourages me.
3	2	My counselor makes me feel I am important.
4	16	The materials and techniques that are used are able to get the point across to me.
5	15	My counselor encourages me to think about my future.
6	32	My counselor is helpful when I have personal or family problems.
7	4	My counselor encourages me to make full use of my time here.
8	21	My counselor tries different ways to help me with my problems.
9	17	My counselor refers me to appropriate sources for specialized information.
10	25	My counselor gives me feedback on my progress.

STUDENT EVALUATION OF STAFF

Form C

In an attempt to improve our staff, Mountain-Plains is requesting your evaluation of the staff with whom you have come in contact. To help us, please rate in the spaces below the staff member whose name appears on the next page to the best of your ability and as honestly as possible. Check the blank that closest describes this staff member. Your answers will be treated confidentially, and the career guidance specialist you are evaluating will not see this form or be informed of your specific answers.

Directions

On the left-hand side of the page is a statement that may or may not be true of your career guidance specialist. Please mark the scale on the right side of the page with a check mark according to the following choices:

____	____	____	____	____	____	(only check one column per item)
1	2	3	4	5	6	

1. Means "This statement is almost always true about my career guidance specialist."

2. Means "This statement is mostly true about my career guidance specialist."

3. Means "This statement tends to be more true than false with regard to my career guidance specialist."

4. Means "This statement is false slightly more than half the time with regard to my career guidance specialist."

5. Means "This statement is often false with regard to my career guidance specialist."

6. Means "This statement is almost always false with regard to my career guidance specialist."

Name of Career Guidance Specialist being Evaluated ____________________

Occupational Area ____________________

Name of Student ____________________

Date of Evaluation ____________________

Family Pay Number ____________________

Sex: Male Female
(circle one)

	Almost Always True	Mostly True	More True Than Not	More False Than Not	Mostly False	Almost Always False
1. My Career Guidance Specialist encourages me.	1	2	3	4	5	6
2. My Career Guidance Specialist makes me feel I am important.	1	2	3	4	5	6
3. My Career Guidance Specialist encourages me to improve in those areas where I am weak.	1	2	3	4	5	6
4. My Career Guidance Specialist encourages me to make full use of my time.	1	2	3	4	5	6
5. My Career Guidance Specialist appears to enjoy his/her work.	1 1	2	3	4	5	6
6. My Career Guidance Specialist treats me like a person.	1	2	3	4	5	6
7. I would enjoy associating with my Career Guidance Specialist on a social basis.	1	2	3	4	5	6
8. My Career Guidance Specialist explains Mountain-Plains policies and procedures which affect me.	1	2	3	4	5	6

	Almost Always True	Mostly True	More True Than Not	More False Than Not	Mostly False	Almost Always False
9. My Career Guidance Specialist answers my questions rather than referring me to someone else.	___ 1	___ 2	___ 3	___ 4	___ 5	___ 6
10. My Career Guidance Specialist does not discriminate against me because of my race.	___ 1	___ 2	___ 3	___ 4	___ 5	___ 6
11. My Career Guidance Specialist listens to what I have to say.	___ 1	___ 2	___ 3	___ 4	___ 5	___ 6
12. My Career Guidance Specialist makes my stay at Mountain-Plains enjoyable.	___ 1	___ 2	___ 3	___ 4	___ 5	___ 6
13. My relationship with my Career Guidance Specialist helps me to feel comfortable with my decision to come to Mountain-Plains.	___ 1	___ 2	___ 3	___ 4	___ 5	___ 6
14. In our talking, the Career Guidance Specialist discussed with me how to cope with problems on the job.	___ 1	___ 2	___ 3	___ 4	___ 5	___ 6
15. My Career Guidance Specialist assisted me in thinking about my future.	___ 1	___ 2	___ 3	___ 4	___ 5	___ 6
16. The teaching and learning materials which were used assisted me in choosing a career.	___ 1	___ 2	___ 3	___ 4	___ 5	___ 6
17. The Career Guidance Specialist discussed with me the requirements and duties of the occupation that I have chosen.	___ 1	___ 2	___ 3	___ 4	___ 5	___ 6

	Almost Always True	Mostly True	More True Than Not	More False Than Not	Mostly False	Almost Always False
18. My Career Guidance Specialist is patient with me.	1	2	3	4	5	6
19. The Career Guidance Specialist explained the purpose of the tests and how they were to be used.	1	2	3	4	5	6
20. I like my Career Guidance Specialist as a person.	1	2	3	4	5	6
21. My Career Guidance Specialist tries other ways to help me with my problems.	1	2	3	4	5	6
22. My Career Guidance Specialist is considerate of my feelings.	1	2	3	4	5	6
23. My Career Guidance Specialist treated all students fairly.	1	2	3	4	5	6
24. My Career Guidance Specialist makes me feel good when I accomplish a difficult task.	1	2	3	4	5	6
25. My Career Guidance Specialist gives me feedback on my progress.	1	2	3	4	5	6
26. My Career Guidance Specialist is the kind of person I would choose for a friend.	1	2	3	4	5	6
27. I felt comfortable when the Career Guidance Specialist discussed the results of the mock interview with me.	1	2	3	4	5	6

	Almost Always True	Mostly True	More True Than Not	More False Than Not	Mostly False	Almost Always False
28. My Career Guidance Specialist assisted me in examining my attitudes toward the World of Work.	___ 1	___ 2	___ 3	___ 4	___ 5	___ 6
29. My Career Guidance Specialist helps me understand the consequences of inappropriate behavior.	___ 1	___ 2	___ 3	___ 4	___ 5	___ 6
30. I can understand my Career Guidance Specialist when he/she explains something to me.	___ 1	___ 2	___ 3	___ 4	___ 5	___ 6
31. My Career Guidance Specialist accepts me as a person.	___ 1	___ 2	___ 3	___ 4	___ 5	___ 6
32. My Career Guidance Specialist is helpful when I have vocational problems.	___ 1	___ 2	___ 3	___ 4	___ 5	___ 6
33. My Career Guidance Specialist can be trusted.	___ 1	___ 2	___ 3	___ 4	___ 5	___ 6
34. My Career Guidance Specialist sets a good example for the students to follow.	___ 1	___ 2	___ 3	___ 4	___ 5	___ 6
35. My Career Guidance Specialist discussed with me the employability of the occupation I had chosen.	___ 1	___ 2	___ 3	___ 4	___ 5	___ 6

Please use the following spaces to include your feelings of the Career Guidance Specialist not covered by the statements on this form:

Areas in which the Career Guidance Specialist does well (please be specific):

____

____

____

____

____

____

Areas in which the Career Guidance Specialist could use some improvement:

____

____

____

____

____

____

Scale 1 - Rapport

Order of Entry	Original Item Number	Item
1	33	My Career Guidance Specialist can be trusted.
2	31	My Career Guidance Specialist accepts me as a person.
3	30	I can understand my Career Guidance Specialist when he/she explains something to me.
4	34	My Career Guidance Specialist sets a good example for the students to follow.
5	23	My Career Guidance Specialist treats all students fairly.
6	18	My Career Guidance Specialist is patient with me.
7	22	My Career Guidance Specialist is considerate of my feelings.
8	20	I like my Career Guidance Specialist as a person.
9	6	My Career Guidance Specialist treats me like a person.
10	26	My Career Guidance Specialist is the kind of person I would choose for a friend.

Scale 2 - Professional Competence

Order of Entry	Original Item Number	Item
1	29	My Career Guidance Specialist helps me understand the consequences of inappropriate behavior.
2	28	My Career Guidance Specialist assisted me in examining my attitudes toward the World of Work.
3	32	My Career Guidance Specialist is helpful when I have vocational problems.
4	14	In our talking, the Career Guidance Specialist discussed with me how to cope with problems on the job.
5	13	My relationship with my Career Guidance Specialist helps me to feel comfortable with my decision to come to Mountain-Plains.
6	24	My Career Guidance Specialist makes me feel good when I accomplish a difficult task.
7	12	My Career Guidance Specialist makes my stay at Mountain-Plains enjoyable.
8	35	My Career Guidance Specialist discussed with me the employability of the occupation I had chosen.
9	2	My Career Guidance Specialist makes me feel I am important.
10	21	My Career Guidance Specialist tries other ways to help me with my problems.

Scale 3 - Interpersonal Skills

Order of Entry	Original Item Number	Item
1	4	My Career Guidance Specialist encourages me to make full use of my time.
2	3	My Career Guidance Specialist encourages me to improve in those areas where I am weak.
3	1	My Career Guidance Specialist encourages me.
4	15	My Career Guidance Specialist assisted me in thinking about my future.
5	11	My Career Guidance Specialist listens to what I have to say.
6	8	My Career Guidance Specialist explains Mountain-Plains policies and procedures which affect me.
7	9	My Career Guidance Specialist answers my questions rather than referring me to someone else.
8	5	My Career Guidance Specialist appears to enjoy his/her work.
9	10	My Career Guidance Specialist does not discriminate against me because of my race.
10	7	I would enjoy associating with my Career Guidance Specialist on a social basis.

STUDENT EVALUATION OF STAFF

Form D

In an attempt to improve our staff, Mountain-Plains is requesting your evaluation of the staff with whom you have come in contact. To help us, please rate in the spaces below the staff member whose name appears on the next page to the best of your ability and as honestly as possible. Check the blank that closest describes this staff member. Your answers will be treated confidentially, and the state coordinator you are evaluating will not see this form or be informed of your specific answers.

Directions

On the left-hand side of the page is a statement that may or may not be true of your state coordinator. Please mark the scale on the right side of the page with a check mark according to the following choices:

_____	_____	_____	_____	_____	_____	(only check one column per item)
1	2	3	4	5	6	

1. Means "This statement is almost always true about my state coordinator."

2. Means "This statement is mostly true about my state coordinator."

3. Means "This statement tends to be more true than false with regard to my state coordinator."

4. Means "This statement is false slightly more than half the time with regard to my state coordinator."

5. Means "This statement is often false with regard to my state coordinator."

6. Means "This statement is almost always false with regard to my state coordinator."

Name of State Coordinator being Evaluated

Number of Months you have been at Mountain-Plains

Name of Student

Date of Evaluation

Name of Job I am Training For

State of Origin into MP Program

	Almost Always True	Mostly True	More True Than Not	More False Than Not	Mostly False	Almost Always False
1. My state coordinator was helpful in getting me into Mountain-Plains.	1	2	3	4	5	6
2. I would not have come to Mountain-Plains if I had not been persuaded to do so by my state coordinator.	1	2	3	4	5	6
3. My state coordinator convinced me that Mountain-Plains is a worthwhile program.	1	2	3	4	5	6
4. My state coordinator showed me that coming to Mountain-Plains was the right thing for me to do.	1	2	3	4	5	6
5. My state coordinator explained the purposes of the Mountain-Plains program to me.	1	2	3	4	5	6
6. Mountain-Plains is just like my state coordinator described it.	1	2	3	4	5	6
7. Before I came to Mountain-Plains I knew it was a research project.	1	2	3	4	5	6

	Almost Always True	Mostly True	More True Than Not	More False Than Not	Mostly False	Almost Always False
8. I have been able to obtain all the benefits from Mountain-Plains that my state coordinator said I would.	1	2	3	4	5	6
9. My state coordinator is interested in me as a person.	1	2	3	4	5	6
10. My state coordinator is interested in how I'm doing at Mountain-Plains.	1	2	3	4	5	6
11. My state coordinator contacts me on a fairly regular basis.	1	2	3	4	5	6
12. My state coordinator will help me to find a job after I leave Mountain-Plains.	1	2	3	4	5	6
13. My state coordinator seems interested in my getting a job I'll like, after leaving Mountain-Plains.	1	2	3	4	5	6
4. My state coordinator was able to help me get myself together to come to Mountain-Plains.	1	2	3	4	5	6
5. I had a good understanding of Mountain-Plains policies before I came here.	1	2	3	4	5	6
6. Since I've been at Mountain-Plains, I have received the kind of treatment my state coordinator told me to expect.	1	2	3	4	5	6
7. The facilities at Mountain-Plains are exactly the way my state coordinator described them to me.	1	2	3	4	5	6

	Almost Always True	Mostly True	More True Than Not	More False Than Not	Mostly False	Almost Always False
18. My state coordinator explained most Mountain-Plains policies and procedures to me before I came here.	1	2	3	4	5	6
19. My state coordinator appears to enjoy his/her work.	1	2	3	4	5	6
20. My state coordinator did not discriminate against me because of race.	1	2	3	4	5	6
21. My relationship with my state coordinator makes me feel I made the right decision in coming to Mountain-Plains.	1	2	3	4	5	6
22. My state coordinator told me that I would have to take a lot of tests while at Mountain-Plains.	1	2	3	4	5	6
23. My state coordinator explained why I would have to take tests while at Mountain-Plains.	1	2	3	4	5	6
24. I like my state coordinator as a person.	1	2	3	4	5	6
25. My state coordinator explained the purposes of Mountain-Plains in a way that made the program more meaningful to me.	1	2	3	4	5	6
26. My state coordinator has helped me with my personal problems.	1	2	3	4	5	6
27. My state coordinator explained the method of individualized study to me before I came to Mountain-Plains.	1	2	3	4	5	6

	Almost Always True	Mostly True	More True Than Not	More False Than Not	Mostly False	Almost Always False
28. My state coordinator can be trusted.	___ 1	___ 2	___ 3	___ 4	___ 5	___ 6
29. My state coordinator encouraged me to come to Mountain-Plains.	___ 1	___ 2	___ 3	___ 4	___ 5	___ 6
30. My state coordinator showed respect for my feelings and opinions.	___ 1	___ 2	___ 3	___ 4	___ 5	___ 6
31. My state coordinator is the kind of person I would choose for a friend.	___ 1	___ 2	___ 3	___ 4	___ 5	___ 6
32. My state coordinator was able to answer all my questions about Mountain-Plains.	___ 1	___ 2	___ 3	___ 4	___ 5	___ 6
33. My state coordinator encouraged me to think about my future.	___ 1	___ 2	___ 3	___ 4	___ 5	___ 6
34. My state coordinator was able to give me good advice about the job market in my area of interest.	___ 1	___ 2	___ 3	___ 4	___ 5	___ 6
35. Judging from my experiences at Mountain-Plains, my state coordinator has an accurate picture of what this place is all about.	___ 1	___ 2	___ 3	___ 4	___ 5	___ 6

Additional Comments and Suggestions: ____

____

____

____

____

____

Scale 1 - Affect

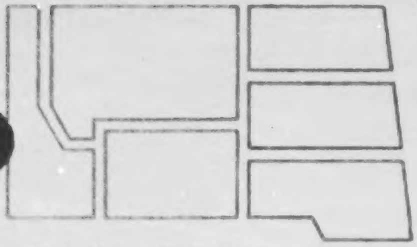
Order of Entry	Original Item Number	Item
1	23	My state coordinator explained why I would have to take tests while at Mountain-Plains.
2	22	My state coordinator told me that I would have to take a lot of tests while at Mountain-Plains.
3	25	My state coordinator explained the purposes of Mountain-Plains in a way that made the program more meaningful to me.
4	18	My state coordinator explained most Mountain-Plains policies and procedures to me before I came here.
5	30	My state coordinator showed respect for my feelings and opinions.
6	33	My state coordinator encouraged me to think about my future.
7	21	My relationship with my state coordinator makes me feel I made the right decision in coming to Mountain-Plains.
8	24	I like my state coordinator as a person.
9	31	My state coordinator is the kind of person I would choose for a friend.
10	19	My state coordinator appears to enjoy his/her work.

Scale 2 - Interest

Order of Entry	Original Item Number	Item
1	10	My state coordinator is interested in how I'm doing at Mountain-Plains.
2	9	My state coordinator is interested in me as a person.
3	13	My state coordinator seems interested in my getting a job I'll like after leaving Mountain-Plains.
4	34	My state coordinator was able to give me good advice about the job market in my area of interest.
5	12	My state coordinator will help me to find a job after I leave Mountain-Plains.
6	11	My state coordinator contacts me on a fairly regular basis.
7	26	My state coordinator has helped me with my personal problems.
8	14	My state coordinator was able to help me get myself together to come to Mountain-Plains.
9	35	Judging from my experiences at Mountain-Plains, my state coordinator has an accurate picture of what this place is all about.
10	16	Since I've been at Mountain-Plains, I have received the kind of treatment my state coordinator told me to expect.

Scale 3 - Competence

Order of Entry	Original Item Number	Item
1	29	My state coordinator encouraged me to come to Mountain-Plains.
2	4	My state coordinator showed me that coming to Mountain-Plains was the right thing for me to do.
3	3	My state coordinator convinced me that Mountain-Plains is a worthwhile program.
4	5	My state coordinator explained the purposes of the Mountain-Plains program to me.
5	1	My state coordinator was helpful in getting me into Mountain-Plains.
6	32	My state coordinator was able to answer all my questions about Mountain-Plains.
7	28	My state coordinator can be trusted.
8	8	I have been able to obtain all the benefits from Mountain-Plains that my state coordinator said I would.
9	6	Mountain-Plains is just like my state coordinator described it.
10	15	I had a good understanding of Mountain-Plains policies before I came here.



A REGIONAL PROGRAM IN

COMPREHENSIVE FAMILY EDUCATION

STUDENT EVALUATION OF CURRICULUM

AUGUST 1976

MOUNTAIN-PLAINS EDUCATION ECONOMIC DEVELOPMENT PROGRAM INC.

BOX 3078, GLASGOW AFB, MONTANA 59231

INTRODUCTION TO INSTRUCTIONAL/CURRICULUM EVALUATION REPORT SERIES

Instructional/Curriculum Evaluation constitutes one aspect of the evaluative process of Mountain-Plains. Reports in this series, together with reports from External and Affective evaluation series, will provide a thorough documentation of the processes and products of Mountain-Plains. Major subdivisions of the series include:

1. User Trial Reports
2. Descriptive Characteristics
3. Summative Analysis
4. Reliability and Validity Studies
5. Student Evaluation of Staff and Curriculum

Individual reports in each series are currently available from, or are in the process of being incorporated into, the ERIC retrieval system. By the conclusion of the NIE research cycle, Instructional/Curriculum Evaluation Reports will number about 40 or 50. Many reports span two or more areas. These include overall internal evaluation reports and reports on the effects of affective variables on cognitive performance.

The reader of individual Mountain-Plains documents should keep in mind that a report takes on full significance only in relation to its report series and the overall research program, and that the reader typically finds frequent reference to earlier reports. While each report is designed to have independent value, such "series dependence" is an inescapable aspect of any systematic program research, and requires some indulgence on the part of the reader.

STUDENT EVALUATION OF CURRICULUM

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August 1976

This Study is a Product of
Research Services Division

David A. Coyle, Director

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STUDENT EVALUATION OF CURRICULUM

INTRODUCTION

The Student Evaluation of Learning Materials Form A (SEC-A) was developed by Mountain-Plains in 1974 as an objective means of assessing student opinion of curriculum materials and procedures. The form is currently used as an internal development tool as well as an external reporting device.

The purpose of this report is to present in detail the reactions of all Mountain-Plains students to all curricula encountered in the course of their stay at Mountain-Plains. Factors measured by the form, scores of each curriculum component on these factors, differences among and within curriculum areas, their meanings, and summative implications are discussed.

METHOD

Population. All 361 students entering the Mountain-Plains program between 1 December 1974 and 31 July 1975 were considered for the purpose of the present report. The students have been described in previous reports (Bunch, 1975) as the stabilization population. The term "stabilization" refers to the fact that all curricula, tests, and procedures had been developed to a stable point, and no alterations were allowed during the time that any of these students were in the program.

Evaluation form. The SEC-A, developed and revised in 1974, originally consisted of 22 Likert-type items arranged on a six-point continuum.

These items were administered to students throughout 1974. The 731 responses received were analyzed by the method of categorical judgement (Thurstone, 1927; Torgerson, 1958).

Two ten-item scales resulted from this procedure. These scales were subsequently cross-validated on a sample of 358 responses. Original sample internal consistency coefficients (coefficient alpha was used) were .96 for Scale 1 and .93 for Scale 2. Cross-validation reliabilities were .97 and .95 for Scale 1 and Scale 2, respectively. Form SEC-A and both scales are included as Appendix A.

Scale 1 consisted of items related to an affective dimension, or how much the student "liked" the curriculum. Typical statements were "...help make my studies more enjoyable," and "keep me interested in what I am doing." Scale 2 was composed of items of a more objective nature, such as,"do not contain words that are hard for me to understand," and "enable me to work on my own without a lot of assistance from the instructor." Scale 1 was therefore entitled "Affect," and Scale 2 was called "Relevance." It is likely that there is an underlying general evaluative factor influencing both Affect and Relevance; the two scales had an intercorrelation of .91 in the original sample and .95 on cross-validation sample. Early assessments of the form also indicate that appraisals of relevance are more favorable than those on the affective, or subjective, scale.

Procedure. Each student was oriented to the nature and purpose of SEC-A during the first two weeks of his or her stay in the program. Each time a student completed, or terminated for some other reason, a curriculum area, he or she was scheduled into the Test Center to evaluate the curriculum and staff of that particular program component. Instructions printed on the front of the form were read aloud to the student by the Test Center Technician. Students were then allowed as much time as they needed to respond to the form. Forms were returned to the Test Center Technician who checked them for completeness and identifying characteristics. Students were asked to identify themselves on the forms for the purpose of studies focusing on determinants of evaluation responses. They were advised that no instructor or other staff person would have access to any identifiable remark directed toward him or her.

The first evaluation forms were returned in late December, 1974. Although, as of 1 July 1976, there were seven of the original 361 stabilization population students remaining in the program, no evaluations received after 1 April 1976 were processed.

Evaluation forms were coded, keypunched, and analyzed by a computer program known as XVAL. XVAL and its companion program RCLUS conform to Thurstone's law of categorical judgement (Thurstone, 1927). While RCLUS builds clusters of items, XVAL responds to predetermined commands specifying the total number of items, number of scales, number of items in each scale, and the specific items in each scale. Results of XVAL are in terms of scale means, scale standard deviations, similar indices for each item, scale internal consistency coefficients, and scale intercorrelations.

Possible scale scores range from 10 to 60 for each scale. Low scores indicate favorable reactions, while high scores indicate unfavorable opinion. A cutoff of 30 was set; scale scores below 30 were considered good, while scores of 30 or above were considered poor.

Means, standard deviations (S.D.), and standard errors of measurement (SEM) were computed for each scale for each curriculum area. A simple decision rule stated, "If the 95% confidence interval (mean ± 1.96 SEM) for any scale for any curriculum area contains the value 30 or any value above 30, that set of evaluations will be regarded as unfavorable." This rule applied to each curriculum area as well as any subtotals (e.g., all Building Trades curricula) and to total evaluation.

Differences among curriculum areas were assessed by analysis of variance (ANOVA). In the event of significant differences being found (p was set at .05), ANOVA was followed by Newman-Keuls *post hoc* procedures to determine significant pairwise differences.

RESULTS

A total of 1996 evaluations of curriculum were received. The great majority of these (1751) were accounted for by Family Core Curriculum. The remaining 245 evaluations came from Foundation Education (75), Office Education (71), Marketing & Tourism (53), Mobility & Transportaion (18), and Building Trades (28). Areas not represented included Welding Support (Mobility & Transportation) and Carpentry, Electrical Wiring, and Drafting (all Building Trades). Item statistics for these 1996 evaluations are contained in Table 1.

Table 1
Summary of Item Responses to SEC-A

Scale 1			Scale 2		
Item	Mean	S.D.	Item	Mean	S.D.
1	1.8	.8	4	1.7	.9
2	1.8	.8	6	1.7	.9
3	1.8	.8	7	1.8	.9
5	1.7	.8	10	1.7	1.0
8	1.9	1.0	13	1.8	.9
11	1.8	.9	17	1.9	1.1
12	2.0	1.2	19	2.1	1.4
14	2.0	1.2	20	1.9	1.0
15	1.8	1.0	21	1.7	1.0
18	2.0	1.2	22	1.8	1.1

Overall means and standard deviations were 18.5 (mean) and 8.3 (S.D.) for Scale 1, and 18.1 (mean) and 7.8 (S.D.) for Scale 2. Means and standard deviations for all curriculum areas are given in Table 2.

Table 2
Summary of Scale Statistics by Curriculum Area
For SEC-A

	Scale 1		Scale 2	
Curriculum Area	Mean	S.D.	Mean	S.D.
Mathematics	19.8	8.3	18.9	7.9
Communication Skills	22.4	11.7	20.4	9.4
Office Education	17.9	8.5	16.1	7.0
Lodging	29.0	8.9	27.4	7.2
Food Services	24.6	9.3	24.6	10.3
Marketing & Distribution	18.1	7.3	16.4	6.4
Automotive	26.0	7.4	25.7	5.2
Small Engines	24.8	10.0	25.0	11.0
Health Education	15.4	5.8	15.5	5.6
Consumer Education	20.3	9.2	19.3	8.7
Home Management	18.8	7.8	18.3	7.4
Parent Involvement	18.3	9.0	18.8	8.4
Electronic Assembly	13.0	0.0	10.0	0.0
Plumbing	11.5	1.5	11.5	1.5
Heating Systems Repair	20.0	0.0	21.0	0.0
Refrigeration/Cooling	18.5	8.5	16.0	6.0
Appliance Repair	16.7	8.1	15.0	6.4
Radio & TV Repair	21.8	6.5	19.7	8.3
TOTAL	18.5	8.3	18.1	7.8

The 95% confidence intervals for overall evaluations were 18.1-18.9 for Scale 1 and 17.8-18.4 for Scale 2. Thus, it can be stated with at least 95% confidence (actually greater than 99.9% confidence) that students had favorable opinions of both aspects of curriculum as measured by SEC-A. There were, however, some curriculum areas indicating negative student responses. For Scale 1 these were Lodging (upper limit=36.8), Automotive (upper limit=30.0), and Small Engines (upper limit=33.6). For Scale 2 these were Lodging (upper limit=33.7), Food Services (upper limit=30.0), and Small Engines (upper limit= 34.6). It appears that many students did not "like" Lodging, Automotive, and Small Engines, and that many students found Lodging, Food Services, and Small Engines curricula to be irrelevant. These findings for Lodging and Small Engines are largely statistical artifacts owing to small sample sizes. The negative rating for Automotive Affect and Food Service Relevance appear authentic.

Due to the small sample sizes of some curriculum areas, some collapsing was done before ANOVA. Lodging (n=5), Food Services (n=14), and Marketing & Distribution (n=34) were combined (n=53). Automotive (n=13) and Small Engines (n=5) were combined (n=18), as were all Building Trades curriculum areas (n=28). Resultant F values (with 9 and 1989 degrees of freedom) were 11.9 ($p < .01$) for Scale 1 and 10.0 ($p < .01$) for Scale 2. Results of Newman-Keuls analyses are displayed in Tables 3 and 4.

Table 3
Significant Pairwise Differences on SEC-A Scale 1 (Affect)

Curriculum Area	Rank	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Health Education	(1)		*	*	*	*	*	*	*	*	*
Office Education	(2)						*	*	*	*	*
Parent Involvement	(3)							*	*	*	*
Home Management	(4)								*	*	*
Building Trades	(5)								*	*	*
Mathematics Education	(6)									*	*
Consumer Education	(7)									*	*
Marketing & Tourism	(8)									*	*
Communication Skills	(9)										*
Mobility & Transportation	(10)										

Table 4
Significant Pairwise Differences on SEC-A Scale 2 (Relevance)

Curriculum Area	Rank	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Health Education	(1)			*	*	*	*	*	*	*	*
Office Education	(2)			*	*	*	*	*	*	*	*
Building Trades	(3)							*	*	*	*
Home Management	(4)									*	*
Parent Involvement	(5)										*
Mathematics Education	(6)										*
Consumer Education	(7)										*
Marketing & Tourism	(8)										*
Communication Skills	(9)										*
Mobility & Transportation	(10)										

Curriculum areas are arranged in order of rank (most favorable to least favorable) in Tables 3 and 4. An asterisk in any cell indicates a significant difference between the two curriculum areas forming the cell (column headings are the ranks of the curriculum areas). Thus, for example, it may be noted that Health Education (1) is significantly better liked (Scale 1) by students than any other curriculum area. Mobility & Transportation (10), on the other hand, is disliked more than any other curriculum area as denoted by the column of nine asterisks under the 10. In Table 4, Health Education (1) and Office Education (2), while not differing from each other, are both perceived as significantly more relevant than the other eight areas.

SUMMATIVE IMPLICATIONS

Mountain-Plains curriculum materials are generally very favorably perceived by students in both a subjective sense and an objective sense. Overall scale scores were far below the cutoff point set, indicating that very few students found fault with the curriculum.

The major exception to the general pattern of favorable impressions was Mobility & Transportation. Students generally neither like the curriculum nor found it relevant (when Automotive and Small Engines are combined, this statement becomes true, although it is not completely true of either taken alone). This finding has been preempted to some degree, however, by recent actions taken in response to internal reports. The Mobility & Transportation component of the program has acquired a new Senior Instructor and new staff who are currently reviewing job title requirements, eliminating faulty or outdated curriculum and test items, and proceeding in a step-by-step fashion to restructure the curriculum in an orderly, relevant fashion. The somewhat questionable absolute rating of Food Services is moderated to some extent when it is considered with the rest of Marketing & Tourism for comparative purposes.

With one exception, Mountain-Plains curriculum materials and procedures are very favorably viewed by students. The efforts of all those individuals during the research and development phase of the program's like were highly successful. The area of exception, currently in a state of revision, will soon have an acceptable, relevant curriculum of its own.

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APPENDIX A

STUDENT EVALUATION OF CURRICULUM MATERIALS

Form A

In an attempt to improve our curriculum materials, Mountain-Plains is requesting your evaluation of those with which you have come in contact. To help us, please rate in the spaces below the curriculum material in your occupational area to the best of your ability and as honestly as possible. Check the blank that closest describes this material. Your answers will be treated confidentially.

Directions:

On the left-hand side of the page is a statement that may or may not be true of the material. Please mark the scale on the right side of the page with a check mark according to the following choices.

____	____	____	____	____	____	(only check one column per item)
1	2	3	4	5	6	

1. Means "This statement is almost always true about the curriculum material I have used."
2. Means "This statement is mostly true about the curriculum material I have used."
3. Means "This statement tends to be more true than false with regard to the curriculum material I have used."
4. Means "This statement is false slightly more than half the time with regard to the curriculum material I have used."
5. Means "This statement is often false with regard to the curriculum material I have used."
6. Means "This statement is almost always false with regard to the curriculum material I have used."

Occupational Area Being Evaluated

Name of Student

Family Pay Number

Number of Months you have Worked in this Occupational Area

Name of Job I am Training For

Date of Evaluation

Sex: Male _____ Female _____

The phrase "learning materials" refers to the books, LAPs, films, slides and other instructional materials you use in your occupational area.

	Almost Always True	Mostly True	More True Than Not	More False Than Not	Mostly False	Almost Always False
1. The learning materials are clear and concise.	1	2	3	4	5	6
2. The learning materials are understandable.	1	2	3	4	5	6
3. The learning materials are able to get the subject matter across to me.	1	2	3	4	5	6
4. The learning materials are worthwhile.	1	2	3	4	5	6
5. The learning materials are useful in helping me understand what I am supposed to be learning.	1	2	3	4	5	6
6. The learning materials enable me to work on my own without a lot of assistance from the instructor.	1	2	3	4	5	6
7. The learning materials are related to the doing activities.	1	2	3	4	5	6

	Almost Always True	Mostly True	More True Than Not	More False Than Not	Mostly False	Almost Always False
8. The learning materials are easy to understand.	1	2	3	4	5	6
9. The learning materials cover all the subject matter.	1	2	3	4	5	6
10. The learning materials are more helpful to me than those I used in public school.	1	2	3	4	5	6
11. The learning materials are arranged in an order that makes sense.	1	2	3	4	5	6
12. The learning materials keep me interested in what I'm doing.	1	2	3	4	5	6
13. The learning materials are necessary to what I am supposed to learn.	1	2	3	4	5	6
14. The learning materials help make my studies more enjoyable.	1	2	3	4	5	6
15. The learning materials are easy to work with.	1	2	3	4	5	6
16. The learning materials are relied on more than the instructor.	1	2	3	4	5	6
17. The learning materials are easy to progress through.	1	2	3	4	5	6
18. The learning materials have real meaning for me.	1	2	3	4	5	6
19. The learning materials are appropriate for my work.	1	2	3	4	5	6
20. The learning materials tell me exactly what it is I need to know.	1	2	3	4	5	6
21. The learning materials are easy for me to read.	1	2	3	4	5	6
22. The learning materials do not contain words that are hard for me to understand.	1	2	3	4	5	6

Additional Comments and Suggestions: ______________________________

Scale 1 - Affect

Order of Entry	Original Item Number	Item
1	2	The learning materials are understandable.
2	1	The learning materials are clear and concise.
3	3	The learning materials are able to get the subject matter across to me.
4	8	The learning materials are easy to understand.
5	5	The learning materials are useful in helping me understand what I am supposed to be learning.
6	15	The learning materials are easy to work with.
7	18	The learning materials have real meaning to me.
8	12	The learning materials keep me interested in what I am doing.
9	14	The learning materials help make my studies more enjoyable.
10	11	The learning materials are arranged in an order that makes sense.

Scale 2 - Relevance

Order of Entry	Original Item Number	Item
1	22	The learning materials do not contain words that are hard for me to understand.
2	21	The learning materials are easy for me to read.
3	17	The learning materials are easy to progress through.
4	6	The learning materials enable me to work on my own without a lot of assistance from the instructor.
5	13	The learning materials are necessary to what I am supposed to learn.
6	20	The learning materials tell me exactly what it is I need to know.
7	4	The learning materials are worthwhile.
8	7	The learning materials are related to the doing activities.
9	19	The learning materials are appropriate for my work.
10	10	The learning materials are more helpful to me than those I used in public school.

A REGIONAL PROGRAM IN
COMPREHENSIVE FAMILY EDUCATION

SUMMATIVE INTERNAL EVALUATION OF MOUNTAIN-PLAINS COMPONENTS

VOLUME I - DESCRIPTIVE CHARACTERISTICS

CHAPTER I - FAMILY CORE CURRICULUM

BOX 3078 GLASGOW AFB, MONTANA 59231

MOUNTAIN-PLAINS EDUCATION ECONOMIC DEVELOPMENT PROGRAM INC.

SUMMATIVE INTERNAL EVALUATION OF MOUNTAIN-PLAINS COMPONENTS

Volume I - Descriptive Characteristics

Chapter I - Family Core Curriculum

Michael B. Bunch

December, 1975

This Study is a Product of
The Research Services Division

David A. Coyle, Director

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Internal Evaluation of Mountain-Plains Components
Volume I: Descriptive Characteristics

Foreword

This volume presents in six chapters a descriptive overview of all areas of instruction at Mountain-Plains. Chapters I-IV deal with specific program components while Chapter VI provides a summary and brief review. The volume integrates five separate NIE contracted reports over a period of time from November 1, 1975 to July 1, 1976, and will be issued as chapters corresponding to those reports on the dates specified in the Mountain-Plains Proposal-FY76 R&D Completion. The first five chapters correspond exactly to the five reports. The purpose of combining the reports in volume form, with summary and review, is to provide continuity and clarity with respect to the many different components of Mountain-Plains instruction. The curriculum areas described in Volume I are grouped as follows:

Chapter	I	Family Core Curriculum (Four Curriculum Areas)
Chapter	II	Foundation Education (Two Curriculum Areas plus GED Preparation)
Chapter	III	Office Education and Marketing & Tourism (Four Curriculum Areas)
Chapter	IV	Building Trades (Ten Curriculum Areas)
Chapter	V	Mobility & Transportation (Three Curriculum Areas)

Each curriculum area is described in terms of course objectives, students validating and various characteristics of the students enrolled. Student-related information is restricted to students entering the program during its stabilization phase (December 1, 1974 through July 31, 1975) and therefore deals with 204 families (361 individuals). Student-related variables include number and percent successfully completing (validating) each course or area, budgeted and actual time parameters, cost per student for each course, and pre-center (sociodemographic) characteristics.

Chapter I contains a description of the four curriculum areas comprising Family Core Curriculum (FCC); viz, Health Education, Consumer Education, Home Management, and Parent Involvement. This is the most comprehensive of all chapters in terms of student characteristics in that it deals with all of the 361 stabilization phase students and as all students experience Family Core Curriculum. Therefore, demographic descriptions of students enrolled in FCC are descriptions of the entire Mountain-Plains student body for the time period under study. The format for Chapter I, as well as for succeeding chapters is as follows:

Summary of Objectives
Curriculum Completion Characteristics
Sociodemographic Characteristics
Conclusions

Chapter II deals with the two curriculum areas, Mathematics Skills and Communication Skills, making up Foundation Education. This chapter is due February 1, 1976. Foundation Education has as goals, not only preparation for occupational studies, but also preparation for the General Educational Development (GED) high school equivalency examination where indicated or desired. A special section will be devoted to the GED.

Chapter III, due March 1, 1976, focuses on Office Education, Lodging, Food Services, and Marketing & Distribution. The latter three areas are collectively called "Marketing and Tourism" and in many instances are dependent upon Office Education for support. Thus, these four areas are treated together.

Chapter IV deals with all the curriculum areas in Building Trades and is due June 15, 1976. These include Carpentry, Electronics Assembly, Electrical Wiring, Plumbing, Heating Systems, Refrigeration/Cooling Systems, Appliance Servicing, Radio & TV Servicing, Electric Motor Repair, and Drafting.

Chapter V, due July 1, 1976, describes, in terms of the previously-mentioned variables, the curriculum areas making up Mobility and Transportation. These areas include Automotive, Small Engines, and Welding Support. Automotive is actually made up of eight job titles and thirteen courses which cut across job titles. Special attention is given to each job title in terms of completion characteristics.

Chapter VI is a summative description of all Mountain-Plains curriculum areas. Although not as detailed as the preceding five chapters, Chapter VI will draw together many important aspects of the Mountain-Plains student body as well as indicate relationships among objectives in the various curriculum areas, job titles, and courses.

All Mountain-Plains courses are divided into units, which are in turn divided into Learning Activity Packages (LAPs). The total curriculum consists of nearly three thousand LAPs (fortunately, no one student ever undertakes more than a few hundred in the course of his occupational preparation) and approximately five hundred units. A listing of objectives by LAP is included as Appendix A to each chapter.

Volume II evaluative reports will treat these objectives. Therefore, a single list of all program or curriculum objectives may serve as a useful reference.

CHAPTER I
FAMILY CORE CURRICULUM

The four curriculum areas comprising Family Core Curriculum (FCC) are Health Education (CA 51), Consumer Education (CA 61), Home Management (CA 63) and Parent Involvement (CA 66). These four areas collectively consist of nine courses, 29 units, and 96 LAPs.

Objectives

All Mountain-Plains curricula are goal or performance oriented. Curriculum area goal statements or Student Terminal Performance Objectives (STPOs) are the highest level of curriculum-specific objectives (program objectives of course represent a higher level of goal statements but are not curriculum-specific). The next level consists of course objectives. When a curriculum area consists of only one course the course objective and STPO are the same. Course objectives, in turn, yield unit objectives. The lowest level at which objectives are stated is the LAP level. The following example is offered for clarification of the relationships among objectives at various levels:

File Code	Title (Level)	Objectives	Bloom Code
51.00.00.00	Health Education (Curriculum Area)	Identify the principles and practices of family health maintenance, first aid, and appropriate utilization of health resources.	1.25
51.01.00.00	Introduction to Health Education (Course)	Correctly perform mouth-to-mouth respiration on Resusci-Anne and recognize symptoms associated with medical emergencies and be able to provide first aid treatment until medical help is available.	2.20 1.11

File Code	Title (Level)	Objective	Bloom Code
51.01.01.00	Health Information (Unit)	Be able to utilize routine and emergency health services available in your area and identify selected definitions and use certain health services.	2.20 1.12
51.01.01.01	General Health Information (LAP)	Recognize types of health services available here, how to select and use them. You will recognize the titles used for health specialists and be able to keep records.	1.11 2.20

These objectives proceed from general to specific. LAP 51.01.01.01 is the first learning activity in the first unit in the first course in curriculum area 51. Objectives listed in this section, however, and in subsequent chapters, are unit level or above. LAP objectives are listed in Appendix A-1. The Bloom Code listed in the final column above is taken from Bloom, Englehart, Furst, Hill, and Krathwohl (1956) taxonomy of behavioral objectives. The taxonomy consists of six behavioral levels with "knowledge" designated as the lowest level (1.00) and "evaluation" designated as the highest level (6.00). Each level contains sub-levels; e.g., 1.12 would represent knowledge of specific facts, whereas 1.25 would indicate knowledge of methodology. A complete listing of Bloom's taxonomy is included in Appendix B.

Table 1.1
Family Core Curriculum Objectives

Curriculum Area 51 - Health Education

File Code	Title (Level)	Objective	Bloom Code
51.00.00.00	Health Education (Curriculum Area)	Identify the principles and practices of family health maintenance, first aid, and appropriate utilization of health resources.	1.25

Table 1.1 (continued)

File Code	Title (Level)	Objective	Bloom Code
51.01.00.00	Introduction to Health Education (Course)	Correctly perform mouth-to-mouth respiration on Resusci-Anne and recognize symptoms associated with medical emergencies and be able to provide first aid treatment until medical help is available.	3.00 1.11
51.01.01.00	Health Information (Unit)	Be able to utilize routine and emergency health services available in your area and identify selected definitions and use certain health services.	3.00 1.12
51.01.02.00	First Aid (Unit)	Define first aid and list the responsibilities and general directions of the person administering first aid; demonstrate the administration of mouth-to-mouth resuscitation using Resusci-Anne; identify correct action to take in selected accident situations; and match the correct use of basic first aid supplies from a given list.	1.11 3.00 1.25
51.02.00.00	Family Health (Course)	Accurately read a thermometer and demonstrate knowledge of health concepts as they relate to maintenance of family health. Recognize warning signs of major health problems; be able to provide home nursing to family members and be able to apply birth control and dental hygiene practices.	3.00 1.12
51.02.01.00	Major Health Problems (Unit)	Recognize the symptoms and health practices to prevent or lessen the severity of selected major health problems.	1.12
51.02.02.00	Home Care of the Ill (Unit)	Recognize how to properly care for the ill at home; state how to report symptoms correctly; demonstrate how to read a thermometer; recognize how to maintain health.	1.25 2.20

Table 1.1 (continued)

File Code	Title (Level)	Objective	Bloom Code
51.02.03.00	Family Life Education (Unit)	Identify and expalin the organs and functions of the reproductive systems; define family planning and be aware of the available forms of birth control.	1.12 2.20
51.02.04.00	Dental Hygiene (Unit)	Recognize the importance of dental hygiene and state the steps necessary to maintain good dental hygiene.	1.11 2.10
Curriculum Area 61 - Consumer Education			
61.00.00.00	Consumer Education (Curriculum Area)	Identify the principles and behaviors of sound money management, sound consumer decision making, and obtaining appropriate insurance protection.	1.31
61.01.00.00	Consumer Education (Course)	Same as 61.00.00.00	
61.01.01.00	Managing Your Money (Unit)	Understand the general concepts of money management and apply them to specific procedural techniques such as use of banking services and budgets.	1.31 2.20
61.01.02.00	A Place to Live (Unit)	To be able to evaluate your family's needs, preferences, and capabilities versus the available housing options in order to choose the best housing alternative for you.	6.20
61.01.03.00	Car Buying (Unit)	To know some of the principles and procedures of economical car buying.	1.31
61.01.04.00	Shopping With Credit (Unit)	To be able to identify the principles and procedures of the credit system, their applications and wise use	1.12

Table 1.1 (continued)

File Code	Title (Level)	Objective	Bloom Code
61.01.05.00	Consumer Awareness (Unit)	To identify forms of consumer fraud and deception and techniques of comparative shopping.	1.21
61.01.06.00	Insurances (Unit)	To identify the types, significant features, and discriminating qualities involved in buying health, life, car, and home owners insurance.	1.12
Curriculum Area 63 - Home Management			
63.00.00.00	Home Management (Curriculum Area)	Identify and understand practices which show appropriate use of nutritional resources, personal and professional grooming, and such home resources as living space, time, and living conditions.	1.21
63.01.00.00	Home Management (Course)	Same as 63.00.00.00	
63.01.01.00	Understanding Nutrition (Unit)	Understand and recognize the relationships, functions, processes and effects of food on the body and their relationship to health and weight control.	1.32
63.01.02.00	Nutrition and Your Health (Unit)	Understand and identify the relationship between nutrition and health including the cycle of malnutrition, vitamin and mineral deficiencies, and the relationship between diet and disease.	1.32
63.01.03.00	Grooming and Impressions (Unit)	Understand and identify the reasons for being concerned about good personal grooming, the technique of good personal grooming and the importance of good grooming on a job interview.	1.31

Table 1.1 (continued)

File Code	Title (Level)	Objective	Bloom Code
63.01.04.00	Clothing and Dress (Unit)	Understand and identify appropriate principles of dress and procedures of fitting attractive and appropriate dress.	1.31
63.01.05.00	Home Care and Utilization (Unit)	Understand and identify the consequences of failure to clean and maintain property. Identify the benefits of creating an environment that suits the individual and his activities. Identify the benefits of organizing time effectively.	1.31
	Curriculum Area 66 - Parent Involvement		
66.00.00.00	Parent Involvement (Curriculum Area)	Identify developmental characteristics of children from birth through adolescence and ways that the adult may identify, guide, and assist in that development.	1.22
66.01.00.00	Interaction With Children (Course)	Identify factors that influence the development of self-image and self-control and ways adults may guide this development.	1.22
66.01.01.00	Self-Image (Unit)	Identify factors that influence the development of self-image and ways adults may guide this development.	1.22
66.01.02.00	Self-Control (Unit)	Identify training techniques which lead to self-control of the child.	1.21
66.02.00.00	Infant (Course)	Identify the developmental characteristics of the baby, ways of caring for the baby, and ways of helping the baby develop to his fullest potential.	1.22
66.02.01.00	Growth and Development (Unit)	Understand growth and development patterns of infant and toddler (through fifth year).	1.22

Table 1.1 (continued)

File Code	Title (Level)	Objective	Bloom Code
66.02.02.00	Care of the Infant and Toddler (Unit)	Identify the importance of and techniques for good physical care of the baby.	1.21
66.02.03.00	Developing the Baby's Potential (Unit)	Identify techniques for teaching the infant and toddler in the home in keeping with the level of development.	1.21
66.03.00.00	The Preschool Child (Course)	Identify ways of identifying and guiding problem behavior and ways of helping the preschool child reach his fullest potential according to his developmental level.	1.21
66.03.01.00	Child Growth and Development (Unit)	Identify developmental behavior patterns, reasons for these patterns, and ways adults may handle these behaviors and identify the forces that can affect the development of preschool children.	1.22
66.03.02.00	The Child's Potential (Unit)	Identify processes of learning, ways of guiding play, processes of speech development, techniques for encouraging creativity, and ways of guiding relationship formation and school preparation in helping the child develop to his fullest potential.	1.25
66.04.00.00	Middle-Age Child (Course)	Identify the developmental characteristics of the child 5-13 and ways adults may guide this development.	1.22 1.25
66.04.01.00	Middle Childhood (Unit)	Identify considerations adults must be aware of as the child ages 5-9 changes in growth and development in order to guide the child during these stages of his development.	1.22
66.04.02.00	Later Childhood (Unit)	Identify considerations adults must be aware of as the child ages 10-13 changes in growth and development, in order to guide the child during these stages of his development.	1.22

Table 1.1 (continued)

File Code	Title (Level)	Objective	Bloom Code
66.05.00.00	Adolescence (Course)	Identify the developmental characteristics and changes of the adolescent and techniques for guiding adolescents to adulthood.	1.22
66.05.01.00	Growth and Development (Unit)	Identify the physical, mental, and social-emotional characteristics and changes of the adolescent.	1.22
66.05.02.00	Developmental Tasks and Adult Guidance (Unit)	Identify techniques for guiding adolescents to adulthood according to the five developmental tasks.	1.22

The majority of Family Core Curriculum objectives may be classified at approximately level 1 of the Bloom taxonomy. An immediate reaction to this classification might therefore be to conclude that the objectives in FCC are somewhat low level. However, because the objectives may relate to others in different areas, judgment must be reserved until evidence from supporting areas is in. For example, Home Management has as an objective the knowledge of the importance of grooming in relation to the process of obtaining employment. Counseling, Career Guidance, and Occupational Preparation all treat this objective (in this case, also termed a Developmental Employability Trait or DET) in a more action-oriented fashion through day-to-day reinforcement and evaluation.

Curriculum Completion Characteristics

Number and percent of students validating Family Core Curriculum. Students validate, or successfully complete any Mountain-Plains program component by demonstrating mastery of each and all objectives of that component through cognitive and/or performance testing. Pretests provide an assessment of mastery prior to instruction. Those objectives for which the student demonstrates mastery on the pretest are said to be pre-validated by the student.

A total of 361 students were enrolled in each of the four curriculum areas included in FCC. Completion rates were almost identical. Totals were as follows:

Curriculum Area	Number Validating	Completion Rate
Health Education (CA51)	348	96.4%
Consumer Education (CA61)	348	96.4%
Home Management (CA63)	349	96.7%
Parent Involvement (CA66)	348	96.7%

The total enrollment figure of 361 consisted of 157 married heads of household (MHOH), 156 spouses, and 49 single heads of household (SHOH). Completion rate by curriculum area and marital status is presented in Table 1.2.

Table 1.2
Family Core Curriculum Completion Rate
by Curriculum Area and Marital Status

	51			61			63			66		
	V	N	T	V	N	T	V	N	T	V	N	T
MHOH	153	4	157	154	3	157	154	3	157	154	3	157
Spouse	153	3	156	152	4	156	152	4	156	152	4	156
SHOH	42	6	48	42	6	48	43	5	48	42	6	48
Total	348	13	361	348	13	361	349	12	361	348	13	361

51=Health Education
61=Consumer Education
63=Home Management
66=Parent Involvement

V=Validator
N=Non-Validator
T=Total

MHOH=Married Head of House
SHOH=Single Head of Household

To determine whether the overall completion rate of 96.5% was evenly spread over all categories of students, a chi-square goodness of fit test was applied to the data in Table 1.2. A value of 33.46 was obtained, which indicated a lack of fit significant beyond the .005 level of chance. Subsequent cell partitioning revealed that the lack of fit was due to the disproportionate number of single heads of household failing to validate each curriculum area. Nearly half of all non-validators in each curriculum area are SHOH, even though single heads represent only about 13% of the total group.

Hours and Cost Characteristics. The number of hours a student is scheduled into a curriculum area depends on the student's pretest score (number of units pre-validated) and an estimate of the number of hours required to complete the units which he did not pre-validate. Actual time spent in the area depends on the rate at which the student masters the objectives of the curriculum area. Thus, two figures appear on each student's work plan, estimated hours and actual hours. In Table 1.3, estimated hours are referred to as budgeted.

Table 1.3
Family Core Curriculum Completion Characteristics

	Enrolled	Mean Budgeted Hours	S. D.[1]	Mean Attended Hours	S. D.	Cost/Hour	Cost/Student
Total Enrolled							
CA 51	361	17.62	1.39	10.99	4.61	$4.23	$46.50
CA 61	361	18.07	2.61	9.07	3.95	6.10	55.33
CA 63	361	16.54	3.02	7.12	4.35	6.35	45.24
CA 66	361	19.49	4.12	9.21	5.20	4.92	45.31
Validators							
CA 51	348	17.59	1.41	11.21	4.44	$4.23	$47.43
CA 61	348	18.04	2.04	9.15	3.76	6.10	55.82
CA 63	349	16.51	3.05	7.19	4.22	6.35	45.66
CA 66	348	19.58	3.56	9.40	5.12	4.92	46.27
Non-Validators							
CA 51	13	18.46	0.50	5.13	5.04	$4.23	$21.70
CA 61	13	19.00	0.00	6.93	7.15	6.10	42.27
CA 63	12	17.50	1.98	5.13	6.62	6.35	32.58
CA 66	13	20.00	4.90	3.89	4.26	4.92	19.15

Grand Total

Total Budgeted Hours	Total Attended Hours	Total Cost	Cost/Hour
25,893.5	13,138.5	$69,449.92	$5.29

Total Cost for Validators	Total Cost for Non-Validators
$67,793.96	$1,475.96

---

[1] Standard deviation

Mountain-Plains Management Information Report (August, 1975) contains a summary of costs by curriculum area for a ten-month period ending June 30, 1975. Costs for each area were then divided by the total number of instructional hours to derive a cost per hour ratio. The ratios for the four curriculum areas in FCC are as follows:

Health Education (CA51)	$4.23/hour
Consumer Education (CA61)	6.10/hour
Home Management (CA63)	6.35/hour
Parent Involvement (CA66)	4.92/hour

Ratios for all instructional areas ranged from $.96 (Marketing & Distribution) to $6.98 (Plumbing). As can be seen from Table 1.3, costs per student were derived by multiplying hours attended by average cost per hour. Of special interest is the comparison of costs for students who complete an area and students who fail to complete. Although the costs per hour are identical for validators and non-validators, hours spent in instruction are greater for validators (the average completer stays in Family Core 21.08 hours). In terms of total costs, it must be remembered that the completion rate for Family Core Curriculum is 96.5%. This fact, coupled with the fact that non-completers stay in the area for a shorter period of time than do completers, accounts for the fact that total cost for non-completers is only $1,475.96, or about two percent of the total expenditure of $69,449.92 for all of Family Core Curriculum.

Average attended hours ranged from 7.12 to 10.99 for all students and from 7.19 to 11.21 for completers. Analyses of variance revealed significant differences in hours of attendance by curriculum area, for total enrollment as well as completers.

Subsequent post hoc analysis (Newman Keuls Test) resulted in only one significant difference between two curriculum areas contributing to the overall significant F value. In both instances the difference between Home Management and Health Education resulted in an overall significance when all four curriculum areas were compared on attended hours.

Budgeted hours ranged from 16.54 to 19.49 for the total group and from 16.51 to 19.58 for completers. Again significant differences were found by analysis of variance but the pairwise comparisons contributing to the overall differences were not the same as the ones contributing to differences in attended hours. For both total group and completers, significantly more hours were budgeted for Parent Involvement than for Home Management or Health Education. All other paired comparisons revealed insignificant differences.

Significant differences in budgeted hours indicate differences either in difficulty of the curriculum area pretests, differences in student knowledge, or amount of material to be covered. The excess of attended hours in Health Education, one of the curriculum areas with the smallest number of budgeted hours indicates that the difficulty of the material in this area is not accurately reflected in the pretest. Other courses with greater budgeted figures (cf. Table 1.3) actually take less time to complete.

The disparity between attended hours and budgeted hours for all curriculum areas indicates that students are making more progress than expected. The major implication of this finding is the necessity to revise all Family Core Curriculum Student Work Plans in addition to a reduction in estimated time required to complete the entire Mountain-Plains Program.

Data for non-completers are more difficult to interpret, due to the small sample sizes and discrepant variances. The pattern for budgeted hours is nearly identical to that for completers. Therefore, it would be extremely difficult to determine, on the basis of pretest scores, which students would complete Family Core Curriculum. It is also impossible to discern whether one curriculum area has greater holding power than another, although it appears that students drop out of Parent Involvement more quickly than Consumer Education. The size of the variances in relation to the means precludes such a conclusion.

Sociodemographic Characteristics

Prior to program entry, information was collected for each of the 204 families in the form of 21 sociodemographic indicators. These indicators may be divided into three categories; educational, employment/income, and quality of life. Educational variables include age and years of education for head of household (HOH) and spouse as well as math and reading scores on the Wide Range Achievement Test (WRAT). Employment/income consists of monthly salary, other non-government subsidy income, annual family income, and number of weeks HOH has been unemployed. Quality of life items include family size, AFDC, Welfare, and unemployment incomes, food stamp costs and value, amount of indebtedness, monthly housing payments, and government housing subsidies.

Information pertaining to these and 78 other indicators is gathered by the six state offices in the form of a pre-program interview. This information is then forwarded to Mountain-Plains for internal evaluation and to Abt Associates for external program evaluation. Because the 204 families entering Family Core Curriculum constitute the entire population for the stabilization period, and since there were so few non-completers in Family Core Curriculum, all descriptions will be of the entire group, rather than of completers vs. non-completers.

Educational Variables. The typical HOH was 26 years old and had completed approximately eleven years of school (mean=10.86 years) before entering Mountain-Plains. Spouses were somewhat younger, averaging 24 years, but had almost identical educational backgrounds (10.91 years on the average). Reading achievement as measured by the WRAT was, in general, closely related to educational attainment, averaging 12.01 years for household heads and 11.66 years for spouses. Mathematics achievement, on the other hand, was considerably lower than grade level attainment, averaging 7.74 years for HOH and 7.89 years for spouses.

Age distribution was extremely skewed for spouses and slightly so for HOH. Although the average ages for HOH and spouses were 26 and 24 respectively, the largest cohort for HOH was 21-25 (39%) and under 20 for spouses (38%). To facilitate interpretation of age data, Table 1.4 (on the following page) is included.

Table 1.4
Age Distribution for HOH and Spouses

Age	Number of HOH	Number of Spouses
0-20	45	58
21-25	78	55
26-30	42	20
31-35	22	15
36-40	8	3
41-45	6	2
46-50	3	3
TOTAL	204	156

Age of spouses ranged from 16 to 48; HOH age ranged from 18 to 50. The 204 HOH include 48 single heads of household (SHOH) and 156 married heads (MHOH).

The observed relationships among grade level attainment, reading achievement, and mathematics achievement reflect occupational as well as educational influences. While no high school data are available for Mountain-Plains students, it may be safe to conclude that mathematically oriented courses were avoided in high school, and that verbally oriented courses, including the usually mandatory English and history courses, were taken. This differential exposure, compounded by entry into nontechnical occupations after high school would account for the uniformly low math achievement of Mountain-Plains students upon program entry.

Employment/Income. Heads of household were unemployed an average of 15.6 weeks during the year prior to filling out the precenter packet. However, unemployment ranged from less than one week (27 families) to a full year (7 families), and the distribution of weeks unemployed had no definite shape except perhaps uniform with small peaks at 0, 4, 8, and 12 weeks. Approximately 50% of all HOH had been unemployed ten weeks or less at the time they filled out the precenter packet.

Family income ranged from no income at all to $9,600 annually. Mean income was $3,530.30, but again there was no meaningful shape to the distribution of income. Modal income was between $4,001 and $5,000 (39 families in this range), and there was a sharp drop after $6,000 (25 families earned between $5,001 and $6,000). Only 18 families earned over $6,000 the year before they entered the program.

The precenter packet contains several income categories. Most of these categories deal with government subsidies and are therefore discussed in the section on quality of life. Two income variables, monthly salary and other income, are discussed here. Mean monthly salary on HOH's last job prior to Mountain-Plains entry was approximately normally distributed with a mean of $482.54 and a standard deviation of $192.73. Other income had a mean of $100.47 over a twelve-month period. but was so unevenly distributed that it would be impossible to state an average total monthly income from these two sources. Only 11.39 reported any income in the "other" category.

Quality of Life. The typical family was caucasian (82% of all student families were in this category; the population of the six-state region is approximately 90% caucasian) and consisted of two parents and one child. Family size ranged from two persons to eight. Aid to Families with Dependent Children (AFDC) averaged $650.95 per year for the 44 families reporting income from this source. Individual families received amounts ranging from $35.00 to $3,216.00.

Eighty-one families participated in food stamp programs, spending an average of $48.46 for $76.20 worth of stamps. Five families received welfare benefits ranging from $65.00 to $2,100 and averaging $839.26 for twelve months. Forty-nine families received unemployment beneftis averaging $522.66 and ranging from $32.00 to $3,036.

Monthly housing payments averaged $61.43, ranging from nothing at all for 52 families to $250.00 per month for one family. Government subsidies were reported by three families as a means of defraying part or all of their monthly rent or house payments. Utilities ranged from $0.00 per month for 82 families to $102 per month for one family. The mean payment was $21.32 per month; however, nearly 60% of all families paid less than this amount. Other indebtedness averaged $705.40, ranging from no debts to $4,400.00 in debts. Most families were at the lower end of this continuum, owing less than $1,000.00.

Summary. Approximately half of all HOH and spouses did not complete high school. This fact is reflected in low achievement in non-verbal areas and relative nonparticipation in a number of activities designed to improve quality of life. For example, only three families received government housing subsidies, and only five families received welfare benefits. Although nearly all families were qualified for unemployment benefits at some time during the year, only 49 families reported receiving them. Only 81 families, out of a much larger number qualifying, reported using food stamps. For many of the families, Mountain-Plains entry represented their first attempt to obtain help in securing a better way of life.

Appendix A
LAP Objectives

File Code	Title (Level)	Objective	Bloom Code
	Curriculum Area 51 - Health Education		
51.01.01.01	General Health Information	Recognize types of health services here, how to select and use them. You will recognize the titles used for health specialists and be able to keep records.	1.11 2.20
51.01.02.01	Definition, Responsibilities, and General Directions of First Aid	Recognize the definitions of first aid and your responsibilities in applying "general directions" to be used.	1.11
51.01.02.02	Recognizing and Treating Shock	Recognize symptoms and identify appropriate treatment of shock.	1.22
51.01.02.04	Artificial Respiration	Recognize conditions needing artificial respiration and be able to demonstrate the process.	1.22
51.01.02.06	Kinds and Treatment of Burns	Identify and prescribe treatment for different kinds of burns.	1.12 5.10
51.01.02.07	Kinds and Treatment of Bleeding	Identify and prescribe treatment for different kinds of bleeding.	1.12 5.10
51.01.02.09	Preventing Infection.	Identify types of wounds prone to infection and be able to prescribe initial prevention measures.	1.12 5.10
51.01.02.10	Head Injuries	Recognize symptoms to watch for after a head injury and be able to recognize if they are severe enough to warrant professional medical attention.	1.24
51.01.02.11	Nosebleeds	Identify treatment of nosebleeds and determine severity to warrant medical attention.	1.24
51.01.02.12	Frostbite	Recognize when frostbite is apt to occur, its treatment and prevention.	1.21

File Code	Title (Level)	Objective	Bloom Code
51.01.02.13	Poisoning by Ingestion	Identify conditions under which poisonings occur, recognize preventive measures and be able to give initial treatment to poisoning victims.	1.21 3.00
51.01.02.15	First Aid Supplies	Be able to recognize how to properly use and store first aid supplies.	1.21
51.02.01.01	Introduction to Communicable Diseases	Identify causes, characteristis, and conditions under which certain communicable diseases occur.	1.22 1.12
51.02.01.03	Strep and Staph Infection	Identify common terms, dangerous kinds and serious complications, treatment and prevention, and precautions to be observed with staph and strep.	1.12
51.02.01.05	Venereal Diseases	Identify names of venereal diseases and their incubation and dormancy periods, symptoms, consequences, cure and precautions.	1.12
51.02.01.07	Heart Diseases	Select appropriate answers which identify types of heart disease, define heart disease, and identify causes and prevention of heart disease, and identify causes and prevention of heart disease.	1.12
51.02.01.08	Cancer	Identify types of cancer, its incidence in the United States, warning signs and prevention.	1.12
51.02.01.09	Diabetes	Define diabetes; identify its symptoms, treatment, detection, complications and the people most likely to develop the disease.	1.11 1.12
51.02.02.01	Maintaining Health	Identify good health habits and keep personal health records.	1.12
51.02.02.02	Precautions When Ill	Identify precautions to be taken when someone is ill, to prevent the spread of diseases.	1.21

File Code	Title (Level)	Objective	Bloom Code
51.02.02.03	Symptoms	Recognize types of symptoms and match symptoms to appropriate diseases for reporting them to a doctor.	1.12
51.02.02.04	Special Diets	Select special diets appropriate to certain physical problems.	3.00
51.02.02.05	Taking Temperature	Identify parts, determine how to read, use and clean a medical thermometer.	1.12
51.02.03.01	Female Reproductive System	Identify specific parts and functions of the female reproductive system.	1.11
51.02.03.02	Male Reproductive System	Identify specific parts and functions of the male reproductive system.	1.11
51.02.03.03	Family Planning and Permanent Forms of Birth Control	Identify all types of birth control including permanent forms.	1.12
51.02.04.01	Teeth and Dental Floss	Recognize causes of tooth decay and select appropriate preventive measures.	1.12 3.00

Curriculum Area 61 - Consumer Education

File Code	Title (Level)	Objective	Bloom Code
61.01.01.01	Principles of Money Management	Identify and understand the basic concepts, purposes and language of money management.	1.21
61.01.01.02	Budgeting Your Money	Know how to make out and evaluate a long-range planning guide and a weekly family budget.	1.25
61.01.01.03	Banking Services	Identify and understand the importance, operation, and uses of various banking services.	1.22
61.01.02.01	The Right Housing for You	To know and be able to evaluate the principal considerations involved in selecting housing according to your family's needs, preferences, and capabilities.	1.31

File Code	Title (Level)	Objectives	Bloom Code
61.01.02.02	The Renting Option	To identify and understand the basic terminology, procedures, *rights, and responsibilities* of renting.	1.11 1.25
61.01.02.03	A Home of Your Own	To identify and understand the basic concepts, discriminating factors and procedures of shopping for and financing a home of your own.	1.25
61.01.03.01	Special Considerations of Car Buying	Identify and understand the special considerations that go into selecting and buying a car.	1.25
61.01.03.02	Used Car Buying	Identify and understand the principles and procedures of economical used car buying.	1.25
61.01.03.03	New Car Buying	Identify and understand the principles and procedures of economical new car buying.	1.25
61.01.04.01	Understanding Credit	Identify and understand the principles, problems, and advantageous uses of credit.	1.25
61.01.04.02	The Credit System in Review	Identify and understand the principle components, operations, and laws of the credit system.	1.25
61.01.05.01	Consumer Fraud and Deception	To identify some of the practices and protections of consumer fraud and deception.	1.25
61.01.05.02	Label Reading and Unit Pricing	To identify the basic concepts and techniques of food label reading and unit pricing.	1.21
61.01.05.03	Food Buying Techniques	To identify the principles, processes, and behaviors of buying food economically.	1.25

File Code	Title (Level)	Objective	Bloom Code
61.01.06.01	Buying Health Insurance	To identify the types, significant features, and discriminating qualities involved in buying health insurance.	1.25
61.01.06.03	Buying Car Insurance	To identify the types, significant features, and discriminating qualities involved in buying car insurance.	1.25
61.01.06.04	Buying Homeowners Insurance	To identify the types, significant features, and discriminating qualities involved in buying homeowners insurance.	1.25

Curriculum Area 63 - Home Management

File Code	Title (Level)	Objective	Bloom Code
63.01.01.01	You Are What You Eat	Identify and understand the basic concepts, functions, and processes of nutrition.	1.31
63.01.01.02	Feeding Your Body	Identify and understand concepts, functions and processes of basic nutrients.	1.31
63.01.01.03	Vitamins and Minerals	Identify and understand basic concepts, identities, functions, and sources of essential vitamins and minerals.	1.31
63.01.01.04	The Carbohydrate Conspiracy	Identify and understand basic concepts, principles, and practical procedures for achieving weight control.	1.31
63.01.02.01	Breaking the Cycle of Malnutrition	To identify the causes, processes, symptoms, and remedies of poor nutrition.	1.31
63.01.02.02	Vitamin and Mineral Deficiencies	To identify the causes, processes, symptoms, and remedies of vitamin and mineral deficiencies.	1.31

File Code	Title (Level)	Objectives	Bloom Code
63.01.02.03	Diet and Disease	To identify the symptoms, processes, and remedies of certain nutritionally related diseases.	1.31
63.01.03.01	As Others See You	To identify the components and mechanics of making a good impression.	1.25
63.01.03.02	Personal Grooming	To identify the elements, distinctions, and tangible benefits of good personal grooming.	1.24
63.01.03.03	Interviewing for a Job	To identify the principles, procedures, and proper behaviors of job interviewing.	1.25
63.01.04.01	Establishing Your Style of Dress	To identify the basic concepts and procedures of establishing an appropriate style of dress.	1.21
63.01.04.02	Making the Most of Your Wardrobe	To identify means and rewards of making better use of wardrobe resources.	1.24
63.01.04.03	Principles of Dress	To identify basic concepts, principles, and applications of design elements related to clothing appearance.	1.25
63.01.05.01	Creating Your Own Environment	To identify some of the underlying concepts and techniques for making the most of your environment.	1.25
63.01.05.02	Organizing Your Home Life	To identify some of the underlying concepts and techniques of organizing your home life.	1.25
63.01.05.03	Clean-up and Maintenance	To identify some of the failings, concerns, benefits, and behaviors of good housekeeping.	1.24

Curriculum Area 66 - Parent Involvement

File Code	Title (Level)	Objectives	Bloom Code
66.01.01.01	The Development of Self-Image	Identify the factors that influence the development of self-image.	1.12

File Code	Title (Level)	Objective	Bloom Code
66.01.01.02	How Adults Can Help	Identify the ways adults can determine a child's feelings about himself and help the child develop a positive self-image.	1.25
66.01.01.04	Communications with Children	Identify various types of, and recognize the effects of communication skills that are helpful in communication with children.	1.21
66.01.02.01	Discipline/Self-Control	Identify training techniques which lead to self-control of the child.	1.25
66.02.01.01	Infant Growth and Development	Identify the developmental characteristics of the infant (ages: birth to one year).	1.12
66.02.01.02	Toddler Growth and Development	Identify the developmental characteristics of the toddler (ages one year to two years).	1.12
66.02.02.01	Physical Care of the Baby	Identify the techniques for physical care of the baby and the importance of good physical care.	1.21
66.02.02.02	Feeding the Baby	Recognize guidelines for correctly feeding the baby and planning a baby's diet.	1.21
66.02.02.03	Clothing the Baby	Identify the features of good clothing and needs and guidelines for developing self-dressing learning.	1.24
66.02.03.01	Learning in the Home	Identify techniques for teaching a young child at home and reasons for using these techniques.	1.25 1.31
66.02.03.02	Learning During First Ten Months	Identify ways of teaching and what an infant must learn in keeping with his level of development.	1.25
66.02.03.03	Learning During Ten to Eighteen Months	Identify ways of teaching and what an infant must learn in keeping with his level of development.	1.25

File Code	Title (Level)	Objective	Bloom Code
66.03.01.01	Developmental Patterns	Identify typical behavior patterns of the preschool child, reasons for these behaviors, and ways adults may best handle these behaviors.	1.21 1.25
66.03.01.03	Forces Affecting Development	Identify the forces within and outside the home that can affect the development of children and ways adults can control these influences.	1.12
66.03.02.03	Ways Children Learn	Identify the processes of learning and the learning recommended during preschool years.	1.21
66.03.02.03	Value of Play	Identify the importance and types of play and ways of guiding play toward maximum learning.	1.31 1.11
66.03.02.04	Developing Speech Habits	State the processes of speech development and ways of encouraging good speech habits in preschool children.	2.10
66.03.02.05	Encouraging Creativity	Recognize reasons for and techniques used in encouraging creativity in children.	1.25
66.03.02.07	Learning to Get Along with Others	Identify the processes of relationship formation and ways of guiding children toward good relationships with others.	1.32
66.03.02.08	Preparing Your Child for School	Identify ways and recognize the importance of guiding a child in his preparation for school.	1.25
66.03.03.01	Common Behavior Problems	Identifying types of problem behaviors and guidelines for changing such behavior.	1.12
66.04.01.01	Physical Characteristics (5-9)	Identify physical characteristics, changes, and needs of children ages five through nine years.	1.12

File Code	Title (Level)	Objective	Bloom Code
66.04.01.02	Social-Emotional Characteristics (5-9)	Identify social-emotional characteristics, needs and changes of middle childhood.	1.12
66.04.01.03	Feelings of Security and Adequacy	Identify ways adults can foster feelings of security and adequacy to meet the level of the middle child's development.	1.25
66.04.01.04	Understanding of Self and Others	Identify how and when the child develops self-identity and an understanding of his relationships with others.	1.22
66.04.01.05	Self-Discipline	Identify ways the adult may guide a child during his development of self-discipline, responsibility and freedom, and characteristics of this development.	1.25
66.04.02.01	Physical Characteristics (10-13)	Identify physical changes which occur between the ages of ten and thirteen years.	1.12
66.04.02.02	Mental Characteristics (10-13)	Identify mental development that occurs between the ages of ten and thirteen.	1.12
66.04.02.03	Social-Emotional Characteristics (10-13)	Identify social-emotional characteristics and changes occuring during the ages of ten to thirteen.	1.12
66.04.02.05	Development Charteristics in Later Childhood	Identify ways the child develops: a. feelings of security and adequacy b. self-discipline c. constructive attitude	1.22
66.05.01.01	Physical Characterteristics (adolescence).	Identify the physical characteristics and changes of adolescence.	1.12
66.05.01.02	Mental Characteristics (adolescence).	Identify the mental characteristics and changes of adolescence.	1.12

File Code	Title (Level)	Objective	Bloom Code
66.05.01.03	Social-Emotional Characteristics (adolescence)	Identify the social-emotional characteristics and changes of adolescence.	1.12
66.05.02.01	Completing Growth from Childhood to Adulthood	Identify techniques for guiding adolescents to adulthood according to the five developmental tasks.	1.25

Appendix B
Bloom's Taxonomy of Behavioral Objectives[1]
(Cognitive Domain)

Knowledge

1.00 Knowledge. Recall of information

1.10 Knowledge of specifics. Emphasis is on symbols with concrete referents.
    1.11 Knowledge of terminology
    1.12 Knowledge of specific facts

1.20 Knowledge of ways and means of dealing with specifics. Includes methods of inquiry, chronological sequences, standards of judgment, patterns of organization within a field.
    1.21 Knowledge of conventions: accepted usage, correct style, etc.
    1.22 Knowledge of trends and sequences
    1.23 Knowledge of classifications and categories
    1.24 Knowledge of criteria
    1.25 Knowledge of methodology for investigating particular problems

1.30 Knowledge of the universals and abstractions in a field. Patterns and schemes by which phenomena and ideas are organized.
    1.31 Knowledge of principles and generalizations
    1.32 Knowledge of theories and structures (as a connected body of principles, generalizations, and interrelations)

Intellectual Skills and Abilities

2.00 Comprehension. Understanding of material being communicated, without necessarily relating it to other material.
    2.10 Translation. From one set of symbols to another
    2.20 Interpretation. Summarization or explanation of a communication
    2.30 Extrapolation. Extension of trends beyond the given data

3.00 Application. The use of abstractions in particular, concrete situations.

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[1] Adapted from D.L. Krathwohl, Stating objectives appropriately for program, for curriculum, and for instructional materials development. Journal of Teacher Education, 1965, 16, 83-92; also appearing in D.E. Payne (Ed.) Curriculum Evaluation. Lexington, Mass.: D.C. Heath & Co., 1974, under the title "Stating Appropriate Educational Objectives," pp. 69-80.

- 4.00 Analysis. Breaking a communication into its parts so that origanization of ideas is clear.
  - 4.10 Analysis of elements. E.g., recognizing assumptions
  - 4.20 Analysis of relationships. Content or mechanical factors
  - 4.30 Analysis of organizational principles. What holds the communication together?.

- 5.00 Synthesis. Putting elements into a whole
  - 5.10 Production of a unique communication
  - 5.20 Production of a plan for operations
  - 5.30 Derivation of a set of abstract relations

- 6.00 Evaluation. Judging the value of material for a given purpose
  - 6.10 Judgment in terms of internal evidence; e.g., logical consistency
  - 6.20 Judgments in terms of external evidence; e.g., consistency with facts developed elsewhere

A REGIONAL PROGRAM IN
COMPREHENSIVE FAMILY EDUCATION

SUMMATIVE INTERNAL EVALUATION OF MOUNTAIN-PLAINS COMPONENTS

VOLUME I - DESCRIPTIVE CHARACTERISTICS

CHAPTER II - FOUNDATION EDUCATION

BOX 3078 GLASGOW AFB, MONTANA 59231

MOUNTAIN-PLAINS EDUCATION ECONOMIC DEVELOPMENT PROGRAM INC.

SUMMATIVE INTERNAL EVALUATION OF MOUNTAIN-PLAINS COMPONENTS

Volume I – Descriptive Characteristics

Chapter II – Foundation Education

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Instructional/Curriculum Evaluation constitutes one aspect of the evaluative process of Mountain-Plains. Reports in this series, together with reports from External and Affective evaluation series, will provide a thorough documentation of the processes and products of Mountain-Plains. Major subdivisions of the series include:

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CHAPTER II
FOUNDATION EDUCATION

Foundation Education is composed of two curriculum areas, Mathematics Skills (CA 11) and Communication Skills (CA 15). These two curriculum areas are in turn made up of 14 courses, 82 units, and 331 LAPs, including preparation for the General Educational Development (GED) tests. The purpose of this chapter is to describe these areas in terms of their objectives and the characteristics of students enrolled in them.

Objectives

Foundation Education objectives are patterned after, and in many instances taken directly from, Individualized Learning for Adults (ILA).[1] The objectives for Mathematics skills were developed by ILA and are used with their permission. Objectives for Communication Skills are patterned after the ILA format with adaptation to accommodate the verbal achievement levels of typical entering Mountain-Plains student families.

In general, course objectives tend to be rather complex, unit objectives are less complex and LAP objectives are quite simple, usually falling into the 1.00 level of Bloom's taxonomy. All six levels of the Bloom classification are represented in the course and unit objectives. These objectives are listed in Table 2.1. LAP objectives are presented in Appendix A.

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[1] Individualized Learning for Adults (ILA), Research for Better Schools, 1972.

Table 2.1
Foundation Education Objectives

Curriculum Area 11-Basic Mathematic Skills[2]

M-P File Code	Title (Level)	Objectives	Bloom Code[3]
11.01.00.00.	Numeration Place Value (Course)	Read numbers, write numbers, count and identify material, describe a part of a whole, convert from fractions to decimals, convert from decimals to fractions, identify percent, identify cent, identify area, identify volume, identify expressions, identify equations, compare exponential notation, find greatest common factor, find least common multiplier, and identify trigonometric functions.	1.11 1.21 1.12 1.23 1.31
11.01.01.00	Unit A	Given an ordered set of pictures, identify numbers less than one hundred.	1.11
11.01.02.00	Unit B	Supply numeral for sets through 200.	1.11
11.01.03.00	Unit C	Identify numerals to 10,000.	1.11
11.01.04.00	Unit D	Identify fractions of sets: halves, thirds, fourths, sixths, eighths.	1.12
11.01.05.00	Unit E	Identify decimals as fractions.	1.21
11.01.06.00	Unit F	Identify primes, ratio proportions, least common multiples, and greatest common factors.	1.23
11.01.07.00	Unit G	Identify place value with positive and negative exponents.	1.31
11.01.08.00	Unit H	Identify coordinate plane and graphing.	1.25

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[2] Objectives are from ILA, Research for Better Schools, Philadelphia, PA, 1972.

[3] Bloom code levels explained in Appendix B.

Table 2.1 (continued)

11.02.00.00	Addition-Subtraction (Course)	Write number of objects in given set, collect more than one set, delete set to make them correspond to given data, solve one step word problems, add or subtract with borrowing, add or subtract time, add or subtract length, add or subtract area, add or subtract volume, use signed numbers, and solve algebraic equations.	1.12 3.00
11.02.01.00	Unit A	Insert or delete elements of a given set and use numeral that represent.	1.23
11.02.02.00	Unit B	Solve addition-subtraction problems involving numbers 1 to 12.	1.25
11.02.03.00	Unit C	Solve problems involving 2 and 3 digits without regrouping.	1.25
11.02.04.00	Unit D	Solve problems that require regrouping and add fractions with the same demoninator.	1.25
11.02.05.00	Unit E	Add and subtract numbers with 4 or more digits, add and subtract common fractions with common denominators and mixed decimal numbers to thousandths place, and solve problems involving unit of time, distance, and measure.	1.25 3.00
11.02.06.00	Unit F	Find the sum of more than two addends with up to six digits, solve problems involving fractions, and add and subtract time in the A.M.-P.M. system.	1.25
11.02.07.00	Unit G	Solve addition and subtraction involving signed numbers.	1.25
11.02.08.00	Unit H	Solve problems involving exponents and signed numbers.	1.25

Table 2.1 (continued)

11.03.00.00	Multiplication Division (Course)	Factor, find products, find quotients, compare numbers, square numbers identify integers, identify rational numbers, perform the four fundamental operations using exponents.	1.25 1.11
11.03.03.00	Unit C	Uses picture array to demonstrate multiplication and division, identifies the terms dividend, divisor, quotient, factor, and product, recalls multiplication and division facts without the use of an array.	2.20 1.11 1.12
11.03.04.00	Unit D	Define and use multiples and solve problems using multiplication and algorithms.	1.11
11.03.05.00	Unit E	Multiply and divide numbers of two or more digits, complete table of perfect square, find perfect square using table, multiply, divide, and simplify common fractions including word problems.	1.25 1.31 2.10
11.03.06.00	Unit F	Multiply and divide mixed fractions, mixed decimals, and percents, convert between fractions, decimals, and percents.	1.25
11.03.07.00	Unit G	Solve problems involving more than one step.	3.00
11.03.08.00	Unit H	Solve problems involving exponents and identify closure of different sub-sets of the Real Number System.	1.25 1.24
11.04.00.00	Geometry Measurement (Course)	Recognize point line and area, recognize volume, length, polygons, weight, temperature, equivalent, time, graphs, and statistics.	1.11 1.23
11.04.02.00	Unit B	Identifies denominate numbers and their values.	1.11

Table 2.1 (continued)

11.04.03.00	Unit C	Identify points, lines, angles, time, temperature, and solids, use dollar sign and decimal point in recording money values.	1.11 1.21
11.04.04.00	Unit D	Make and record measurement, solve problems requiring conversion within the English system, and identify geometric figures.	3.00 1.25
11.04.05.00	Unit E	Solve problems that may include conversions, and make geometrid identifications and constructions.	1.25 3.00
11.04.06.00	Unit F	Continue conversions and comparisons (two dimensions), make geometric identifications and constructions, and solve area problems.	1.25 3.00
11.04.07	Unit G	Continue English-metric conversions, find area of polygons and solve for missing dimension, convert between units for measuring area, and find arc of circle.	1.25 3.00
11.04.08.00	Unit H	Solve area and volume problems and identify congruent figures.	1.25 4.10

Curriculum Area 15-Basic Communication Skills

M-P File Code	Title (Level)	Objective	Bloom Code
15.03.00.00	Level E (Course)	Identify root words.	1.11
		Describe and identify compound words.	1.11
		Combine two root words to form a third word.	1.21
		Recognize and define the types of nouns in their various forms.	1.11
		Arrange letters and words alphabetically.	1.31
15.03.01.00	Root Words (Unit)	Recognize root words.	1.11
15.03.02.00	(Compound Words) (Unit)	Recognize and form compound words.	1.11
15.03.03.00	Understanding Compound Word Forms (Unit)	Combine two words of different meaning to form a third word.	1.21
15.03.04.00	Nouns	Recognize and define nouns in their various forms.	1.11
15.03.05.00	Alphabet (Unit)	Arrange words in alphabetical order.	1.23
15.04.00.00	Level F (Course)	Learn to form the plurals of nouns by adding "s" and "es" to singular noun forms.	1.21
		Define a synonym and select a synonym for a given word.	1.11
		Define a homonym and select a homonym for a given word.	1.11
		Define an antonym and select an antonym for a given word.	1.11
		Identify a written passage as either informative or entertaining.	4.10
		Learn the meaning of given descriptive words and integrate their meaning with other words for better comprehension.	1.11
		Identify and define topic sentences in given paragraphs.	1.11
		Formulate and state the main idea in given paragraphs.	2.20

15.04.00.00 (continued)

15.04.00.00	Level F (Course)	Identify and define complete sentence structures.	1.21
		Alphabetize names and titles to the third position.	1.23
15.04.01.00	Recognition and Formation of Plural Words (Unit)	Correctly form the plural of words.	1.21
15.04.02.00	Definition and Recognition of Synonyms, Antonyms, and Homonyms (Unit)	Use synonyms, antonyms, and homonyms correctly.	1.31
15.04.03.00	Basic Reading Structures (Unit)	Formulate and state the main idea within the context of a given paragraph.	2.20
15.04.04.00	Complete Sentences (Unit)	Recognize the subject and verb of a sentence.	1.23
15.04.05.00	Alphabetizing (Unit)	Alphabetize names and titles to the third letter condideration.	1.23
15.05.00.00	Level G (Course)	Learn to spell root words with suffixes added to form another word.	
		Learn to identify word meanings from context.	2.20
		Learn to use the main idea as an aid to reading for recall.	2.30
		Identify relevant fact as opposed to opinion as an aid to identifying and formulating main ideas.	4.10
		Draw a logical conclusion to a stated story, paragraph, or sentence.	2.30
		Identify properly used terminal punctuation.	1.24
		Learn to use a dictionary in order to properly spell, pronounce, and define a word.	3.00
15.05.01.00	Suffixes (Unit)	Properly spell root words with suffixes added to form another word.	1.21

15.05.02.00	Word Meanings (Unit)	Define words by using context clues.	2.20
15.05.03.00	Main Idea and Recall (Unit)	Recognize the continuity of the main ideas through a group of related paragraphs.	2.30
15.05.04.00	End Punctuation (Unit)	Recognize and punctuate complete sentences and the four different types of sentences.	3.00
15.05.05.00	Dictionary (Unit)	Learn to use a dictionary in order to properly spell a word, pronounce a word and define a word.	3.00
15.06.00.00	Level H (Course)	Learn to join prefixes with a root word to form a new word.	1.21
		Learn to correctly identify, define and spell a root word with a prefix.	1.11
		Learn to join a suffix to a root word to form a new word.	1.21
		Learn to identify and define a root word.	1.11
		Learn to formulate questions as an aid to reading recall.	5.20
		Learn to read in order to answer stated questions.	4.10
		Learn to read in order to answer indirect questions.	4.20
		Learn to identify writing as to author intention.	4.30
		Learn to identify proper capitalization of words in sentences.	1.24
		Learn to identify and state the function of the various parts of a book.	1.12
15.06.01.00	Recognition and Formation of Prefixes and Suffixes (Unit)	Identify and use prefixes and suffixes correctly.	1.21
15.06.02.00	Writing Definitions for Root Words (Unit)	Unlock new words by determining root word meaning.	2.20
15.06.03.00	Who, What, Where and Why (Unit)	Recognize fact from opinion.	4.10

15.06.04.00	Capitalization	Correctly use capitalization	1.21
15.07.00.00	Level I (Course)	Identify properly formed contractions.	1.11
		Identify words that have been properly divided into syllables.	1.24
		Identify properly formed possessives.	1.24
		Define an unknown word through context.	2.20
		Define a given word through context.	2.20
		Identify the various figures of speech.	1.11
		Arrange jumbled passages into a logical sequence.	4.20
		Demonstrate comprehension of written technical material.	2.20
		Identify proper subject verb agreement in given sentences.	1.24
		Define the general structure of an encyclopedia. Use the encyclopedia effectively.	1.12 3.00
15.07.01.00	The Apostrophe (Unit)	Recognize and identify properly contracted and possessive forms.	1.24
15.07.02.00	Syllabication and Context Clues (Unit)	From a passage unlock new words by using context clues.	2.20
15.07.03.00	Preparation For Technical Reading	Identify various figures of speech.	1.11
		Arrange given jumbled passages into a logical meaningful sequence.	4.20
		Demonstrate comprehension of technical writing.	2.20
15.07.04.00	Subject-Verb Agreement (Unit)	Use the correct form of a verb with a singular or plural subject, according to the rules of subject-verb agreement.	1.21
15.07.05.00	Use of the Encyclopedia (Unit)	Recognize the parts of and the proper use of the encyclopedia.	1.12
15.08.00.00	Level J (Course)	Identify words that are properly syllabified.	1.24
		Properly form the plurals of nouns.	1.21
		Predict outcome from observation of detail.	2.30
		List words and groups of words under proper headings.	1.23
		Follow written directions and identify correct responses to those directions.	2.20

15.08.00.00 (continued)

15.08.00.00	Level J (Course)	Identify the proper form of the adjective in given sentences.	1.24
		Identify the proper form of the adverb in given sentences.	1.24
		Identify the proper use of pronouns in given sentences.	1.24
15.08.01.00	Syllabication (Unit)	Divide words into syllables.	1.21
15.08.02.00	Noun Plurals and Guide Words (Unit)	Given a passage, unlock new word meanings through quick reference by means of guide words.	2.20
15.08.03.00	Directional Reading (Unit)	Predict outcome from observation of detail.	2.30
		List words and groups of words under proper headings.	1.23
		Follow written directions.	2.20
15.08.04.00	Placing Words (Unit)	Identify adjectives, adverbs and pronouns in a sentence.	1.11
15.08.04.00	Dewey Decimal System/Card Catalog (Unit)	Identify all the major divisions of the Dewey Decimal System and use the card catalog system based on it.	1.23
15.09.00.00	Level K (Course)	Identify the possessive case of nouns, correctly formed contractions, correctly formed plurals to regular and irregular nouns.	1.21 1.24
		Identify correct meanings of prefixes and suffixes.	1.11
		Identify proper and improper capitalization.	1.24
		Given examples of the eight parts of speech, identify those correctly used.	1.24
		Define and identify regular and irregular verbs.	1.11
		Define and identify proper verb-subject agreement.	1.24
15.09.01.00	Possessives, Contractions, and Plural Nouns (Unit)	Identify properly formed possessives, contractions and plural nouns.	1.24

15.09.02.00	Prefixes and Suffixes (Unit)	Identify correct meanings of prefixes and suffixes joined to root words.	1.11
15.09.03.00	Capitalization (Unit)	Identify examples of proper and improper capitalization.	1.24
15.09.04.00	The Eight Parts of Speech (Unit)	Identify the various classifications of nouns, pronouns and verbs; correctly used adjectives and adverbs; correctly used prepositions, conjunctions, and interjections.	1.11 1.24
15.09.05.00	Verb Forms (Unit)	Define and identify examples of the correct use of regular and irregular verbs.	1.24
		Define and identify examples of proper verb-subject agreement.	1.24
15.10.00.00	Level L (Course)	Add prefixes and suffixes to root words and identify and define the resultant word.	1.21
		Identify context clues in terms of restatement, examples and inference.	2.20
		Identify proper use of terminal punctuation and quotation marks.	1.24
		Identify proper use of modifiers (adjectives and adverbs).	1.24
		Given sentences containing confusing word pairs, identify their proper use.	1.24
15.10.01.00	Prefixes and Suffixes (Unit)	Add prefixes and suffixes to root words and identify and define the resultant word. From a list of alternatives choose the appropriate rule for adding prefixes and suffixes to root words.	1.21 1.31
15.10.02.00	Context Clues	Identify context clues in terms of restatement and example.	2.20
		Identify correct word meaning through inference.	2.20
15.10.03.00	Terminal Punctuation (Unit)	Identify properly used terminal punctuation.	1.24
		Identify properly used quotation marks.	1.24
15.10.04.00	Modifiers (Unit)	Use adjectives properly and use adverbs properly.	1.21 1.21

15.11.05.00	Pronouns and Prepositions (Unit)	Identify properly used pronouns and prepositions in a given sentence structure.	1.24
15.12.00.00	Level N (Course)	Given a list of alternatives, the student will identify the correct spelling of designated words.	1.11
		Given examples, identify facts, opinions, issues, and inferences.	4.10
		Given examples, identify proper use of semicolons, dashes, and colons.	1.24
		Given examples of sentences, identify those with concise sentence structure.	4.30
15.12.01.00	Spelling Demons I & II (Unit)	Identify correct spelling of listed difficult words.	1.11
15.12.02.00	Facts, Opinions, Issues, and Inferences (Unit)	Identify facts, opinions, and issues.	4.10
		Identify inference from examples.	2.20
15.12.03.00	Semicolons, Dashes, and	Identify properly used semicolons, dashes, and colons.	1.24
15.12.04.00	Sentence Structure (Unit)	Identify proper sentence structure from given examples.	1.24
15.12.05.00	Exact Sentence Writing (Unit)	Identify concise sentence structure from given examples.	1.24
15.13.00.00	Level O (Course)	Given alternatives, identify the correct spelling of commonly mispelled words.	1.11
		Given examples of formal and colloquial language patterns, identify the formal language pattern.	1.23
		Given examples of proper and improper punctuation, identify the proper form.	1.24
		Identify the elements necessary to a properly constructed paragraph and a properly constructed composition.	1.24
15.13.01.00	Commonly Mispelled Words (Unit)	Identify the correct spelling of a word from a given list.	1.11

15.13.02.00	Formal Vocabulary (Unit)	Identify formal language patterns from a group of patterns displaying both formal and colloquial structures.	1.23
15.13.03.00	Troublesome Punctuation (Unit)	Identify properly used punctuation from groups of sentences both properly and improperly punctuation.	1.24
15.13.04.00	Rules for Manuscript (Unit)	Identify and define proper rules pertaining to manuscript layout.	1.24
15.13.05.00	Paragraphs into Compositions	Identify the elements necessary to properly construct (1) paragraphs and (2) compositions.	1.24

Mastery of Foundation Education objectives is a prerequisite to entry into and/or exit from all 41 job titles offered by Mountain-Plains. Although minimal levels of quantitative and verbal proficiency are required for basic program entry (4.5 grade level math achievement and 5.0 grade level achievement in reading as measured by the Wide Range Achievement Tests), higher levels may be required for entry into some curriculum areas, based on the Mountain-Plains identified communications and math skills required in that particular career area. Even higher levels of competence are sought by students as they complete job training. Thus, for example, a student who elected to enter the clerk-typist career ladder would be expected to have mastered through level E of each course of Mathematics Skills (each course in Mathematics Skills progresses from simple to complex, Level A corresponding roughly to first grade and Level H corresponding to eighth or ninth grade level achievement, as opposed to a curriculum in which each course is more complex than the one preceding it, and in which units within courses are of approximately equal complexity) and up through Course 15.09.00.00 (Level K) of Communication Skills. In order to exit the career area as an employable clerk-typist, the student is expected to master additional objectives through Unit F of each course in CA 11 and through Course 15.13.00.00 (Level O) in CA 15. Table 2.2 contains a summary of requirements for entry into and exit from each job title. Again note, communication and math skills requirements are predicated upon Mountain-Plains assessment of what is required for successful employment in each career area. Also again note, there are basic entry level requirements for the program as a whole.

Table 2.2
Foundation Education Requirements by Job Title

Job Title	Mathematics Skills		Communication Skills	
	Entry	Exit	Entry	Exit
Clerk	E	F	H	J
Clerk-Typist	E	F	K	O
Clerk-Stenographer	E	F	K	O
Accounting Clerk	E	F	K	O
Bookkeeper	F	G	K	O
Keypunch Operator	E	F	K	M
Supervisory Housekeeper	-	E	G	J
Desk Clerk	-	F	G	J
Night Auditor	-	F	G	J
Assistant Manager Trainee	-	F	G	M
Kitchen Supervisor Trainee	-	E	F	J
Chef Trainee	-	E	H	J
Restaurant Manager Trainee	-	F	H	J
Bakery Manager Trainee	-	F	H	J
Restaurant Cook	-	E	F	H
Institutional Cook	-	E	F	H
Second Baker	-	E	G	H
Checker-Cashier	-	F	G	J
Shipping & Receiving Clerk	-	F	E	G
General Salesperson	-	F	G	J
Professional Salesperson	-	F	J	O
Mid-Management Trainee	-	F	J	O
Light Duty Mechanic	-	E	F	G
Engine Rebuilder	-	G	H	J
Engine/Transmission Repairman	-	F	H	J
Tune Up & Engine Repairman	-	F	H	J
Tune Up & Auto Air Conditioning Repairman	-	G	H	J
Transmission Mechanic	-	F	H	J
Brake & Front End Mechanic	-	F	H	J
General Mechanic	-	G	H	J
Small Engine Mechanic	-	F	F	H
Carpenter	-	H	G	J
Electronics Assembler	-	H	H	J
Electrical Wireman	-	H	H	J
Plumber	-	H	G	J
Heating Systems Serviceman	-	H	H	J
Refrigeration/Cooling Systems Serviceman	-	H	H	J
Appliance Serviceman	-	H	H	J
Radio & TV Repairman	-	H	H	J
Electric Motor Repairman	-	H	H	J

Curriculum Completion Characteristics

Number and percent of students validating Foundation Education. Validation has been previously defined (Bunch, 1975) as successful completion of an instructional component, whether it be a LAP, unit, course or job title. Validation is achieved through demonstrations of mastery of all objectives of the Component through cognitive and/or performance testing. Scheduling into the Foundation Education area is based upon occupational goals, pretest scores, and/or the expressed desire to prepare for GED examinations.

Of the 361 individuals in the stabilization population, 233 enrolled in Mathematics Skills for occupation-related instruction; 208 enrolled in Communication Skills for Occuation-related instruction; and 80 students enrolled in GED preparation. At the time of preparation of this chapter, 93.5% of all students entering the area had exited. Other individuals in the stabilization population may be accounted for in the following manner: Mathematics Skills prevalidated by 29 MHOH, 60 spouses, 11 SHOH; Communication Skills prevalidated by 76 MHOH, 43 spouses, 17 SHOH. Five MHOH and their spouses dropped out of the program before pretesting in Foundation Education, as did two SHOH. The remainder of spouses elected Category B, an option open to spouses who do not wish to go into occupational preparation. Table 2.3 contains a summary of student completion status by area and marital status.

Table 2.3
Foundation Education Completion by Curriculum Area and Marital Status

	Mathematics Skills				Communication Skills				GED			
	V	I	N	T	V	I	N	T	V	I	N	T
MHOH	101	6	16	123	60	6	10	76	11	6	17	34
Spouse	58	1	16	73	79	7	13	99	13	3	20	36
SHOH	23	3	9	35	26	1	6	33	29	1	4	10
Total	182	10	41	233	165	14	29	208	29	10	41	80

MHOH = Married Head of Household
SHOH = Single Head of Household
V = Validate
N = Not Validate
I = Incomplete
T = Total

Students in the Incomplete category were primarily those entering the program near the end of the stabilization period (ending July 31, 1975). The overall rate of 6.5% in this category was unevenly spread among the three curriculum areas with 4.3% in Mathematics Skills, 6.7% in Communication Skills, and 12.5% in GED preparation. For the sake of convenience, completion rates have been adjusted and are presented in Table 2.4. Henceforth, all references to or comparisons of rates will be for adjusted rates unless otherwise specified.

Table 2.4
Adjusted Completion Rates by Curriculum Area and Marital Status

Mathematics Skills

	Validate		Not Validate	
	Raw %	Adj. %	Raw %	Adj. %
MHOH	82.1	86.3	13.0	13.7
Spouse	77.3	78.4	21.3	21.6
SHOH	65.7	71.9	25.7	28.1
Total	78.1	81.6	17.6	18.4

Communication Skills

	Validate		Not Validate	
	Raw %	Adj. %	Raw %	Adj. %
MHOH	79.0	85.7	13.2	14.3
Spouse	79.8	85.9	13.1	14.1
SHOH	78.8	81.2	18.2	18.8
Total	79.3	85.0	13.9	15.0

GED

	Validate		Not Validate	
	Raw %	Adj. %	Raw %	Adj. %
MHOH	32.4	39.3	50.0	60.7
Spouse	36.1	39.4	55.6	60.6
SHOH	50.0	55.6	40.0	44.4
Total	36.2	41.4	51.2	58.6

It is worth noting that the two areas in which validation is an occupational prerequisite, student success rates are above 80%. GED preparation, on the other hand, is both voluntary and more time consuming than either of the other two areas (owing to the fact that very few job titles require as much quantitative or verbal preparation as do the equivalency exams).

Total completion rates, in general, were quite representative of each of the three status groups. However, in CA 11 discrepancies were apparent. Chi-square analysis revealed that married heads of household were more likely to validate than normally expected (that is, success rate was significantly greater than 81.6%), while spouses validated slightly less often than expected, and single heads of household validated much less often than expected ($X^2_2 = 95.5$, $p < .005$). A more complete breakdown of completion by area is contained in Table 2.5.

Table 2.5
Foundation Education Completion Characteristics

	No. Enrolled	Mean Budgeted Hours	S.D.[4]	Mean Attended Hours	S.D.	Cost Hour[5]	Cost Student
Total Enrolled							
CA 11	233	75.6	39.2	87.8	61.2	$2.69	$236.18
CA 15	208	62.9	35.5	47.2	38.9	3.13	147.74
GED	80	117.0	79.8	36.1	30.0	2.91	105.05
Validators							
CA 11	182	78.5	39.7	99.5	62.6	$2.69	$267.66
CA 15	165	60.3	36.2	49.2	39.8	3.13	154.00
GED	29	117.5	62.9	54.6	30.2	2.91	158.89
Non-Validators							
CA 11	41	60.8	32.3	47.1	32.1	2.69	126.70
CA 15	29	73.0	32.6	35.1	30.1	3.13	109.86
GED	41	115.4	85.9	23.0	22.2	2.91	66.93
Incomplete							
CA 11	10	96.7	43.8	****	****	2.69	******
CA 15	14	74.2	27.1	****	****	3.13	******
GED	10	122.1	101.4	****	****	2.91	******

****Not Computed

GRAND TOTAL

Total Budgeted Hours[6]	Total Attended Hours[6]	Total Cost	Cost/Hour
36,988	30,867	$89,856.70	$2.91

Total Cost for Validators	Total Cost for Non-Validators
$78,731.93	$11,124.77

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[4] Standard Deviation

[5] GED preparation involves components of Mathematics Skills (CA 11) and Communication Skills (CA 15); therefore, cost per hour is based on an unweighted average of the two curriculum areas.

[6] Does not include hours of students in Incomplete category

Of particular interest in Table 2.5 is the comparison of hours attended versus hours budgeted. Overall (GRAND TOTAL), work plans tended to overestimate the time required to master all area objectives. However, these totals include the attended hours of 111 non-validating students, many of whom dropped the courses after only a few hours of work. A more accurate picture is available in the contrasts for groups of students validating an area. Significant differences were found in each area. Mathematics Skills reversed the trend of overestimation with an average budget of 78.5 hours versus an average attendance of 99.5 hours. A two-sample test with pooled variance yielded a t value of 3.4 ($p<.005$). Both Communication Skills and GED preparation were significantly over-estimated with t values of 2.64 ($p<.005$) and 20.97 ($p<.005$), respectively.

Costs were derived from estimates taken from the Mountain-Plains Management Information Report (Covering the Period Through November, 1975) and by multiplying average attended hours. No attended hours or total cost are given for students in the Incomplete category since their hours are not yet final, and any estimate based on present hours would be a deflated one. Excluding these students, a total cost of $89,856.70 is incurred for 30,867 hours for a cost of $2.91 per student instructional hour.

Sociodemographic Characteristics

The nature of sociodemographic variables has been discussed in Chapter I. Such information is gathered from each student family prior to program entry. This section contains a summary of these characteristics for married heads of households, spouses, and single heads of households. While there are differences from curriculum area to curriculum area with respect to which students are enrolled there is sufficient communality to render unnecessary discussions for each marital status group for each curriculum area. Therefore, the curriculum area with the largest number of a particular group will be taken as representative. Thus married and single heads of household will be described in terms of those heads of household enrolled in Mathematics Skills, while spouses will be described in terms of those enrolled in Communication Skills.

Educational variables. This category included age, years of education, and scores on the verbal and quantitative portions of the Wide Range Achievement Tests (WRAT). The distributions of all these variables were somewhat skewed; therefore, medians, rather than means, are presented. Table 2.6 contains a summary of these variables.

Table 2.6
Summary of Educational Variables

	Age	Years of Education	WRAT Verbal	WRAT Math
MHOH	26	10.5	11.7	6.7
Spouse	21.5	11.5	11.9	7.3
SHOH	25	11	12.0	6.4

An interesting discrepancy concerning educational attainment and tested achievement was discovered. Analysis of variance by group and variable revealed a highly significant variable effect ($F=261.56$, $p < .01$). Subsequent post hoc tests (Newman-Keuls) showed that all differences were significant; that is, students' WRAT verbal achievement scores are much higher than grade level attainment would suggest, and WRAT quantitative scores are significantly lower. This same phenomenon was mentioned in Chapter I with reference to the entire stabilization population (N=361) and appears to be a stable characteristic of the Mountain-Plains population.

Work/income variables. Variables included in this category are weeks of unemployment of head of household, total family income, monthly salary from most recent job, AFDC, welfare, unemployment, and other income. Typical married heads of household had been unemployed 12-13 weeks during the year prior to program entry, whereas it was not unusual for single heads to be unemployed 24-26 weeks, or twice as long, during the same year.

The typical single head of household would be a 25 year-old divorced woman with one child, living in a small apartment or with relatives (about $50 per month rent, no utilities), and having no income other than wages. However, approximately 47% of all SHOH received AFDC payments. The average payment for these women was $814.56. She would normally work full-time whenever she was employed (26 was the median number of weeks unemployed) and earn $350 per month. Median reported annual income was approximately $1,200. This fact is difficult to reconcile with the unemployment and monthly salary figures which would produce a projected annual income of $2,100. However, even this figure is far below the poverty level.

Both monthly salary and annual income were higher for two-parent families, even when only one parent's income is counted. Median income for HOH was $476 per month and $3,950 per year. Again, monthly income and unemployment rate (12-13 weeks during the year) would yield a projected income of nearly $1,000 higher than the reported income. Dual parent families typically received no unemployment, AFDC, welfare, or any other source of income (12% received AFDC and fewer than 10% reported income from any of the other sources).

Quality of life. Quality of life encompasses a group of quantifiable entities including size of household, use and value of food stamps, extent of indebtedness, housing costs and subsidies, and cost of utilities. The single head of household described earlier is fairly representative of all Mountain-Plains students in terms of use of subsidies. Very few families reported taking advantage of food stamps or federal housing subsidies. Median and modal values for cost of stamps, value of stamps, and amount of housing subsidy, were all $0.00.

Indebtedness reflected the general economic viability of most families. Single heads, working typically for less money per month and with less employment security, had total debts of $300 (median). Dual parent families, on the other hand, typically owed $600-$800, and totals of $2,000-$3,000 were not uncommon. The greatest reported indebtedness for a single head was $1,400.

Caution is suggested in interpreting these pre-center characteristics. Although the type of information gathered is traditionally fairly reliable (cf. Keating, Patterson, & Stone, 1950; Mosel & Cozan, 1952; or van Es & Wilkening, 1970), there are a number of anomalies in the reports of prospective students. Income has been mentioned as part of the issue. Food stamps represent another aspect of this phenomenon. In all cases, far more people reported buying food stamps than using them (this is even true of the control population). Achievement test scores not only vary with each other but with educational attainment as well.

GED Preparation

Preparation for General Educational Development equivalency tests is coordinated by the Foundation Education area. In addition to LAPs, units, and courses within the normal framework of Mathematics Skills and Communication Skills, materials developed by the U.S. Department of Labor are used to enable students to achieve mastery of more specific objectives.[7] The 123 DOL booklets (listed in Appendix C) include basic verbal skills, social studies, natural science, and mathematics. Within any given subject matter context, materials have been arranged in the LAP, unit, and course fashion that is characteristic of all Mountain-Plains curricula, thus enabling the student to progress at his own speed with minimum assistance.

As pointed out previously, 80 students enrolled in GED preparation. Although GED completion is not required for program completion, the fact that 41 students dropped it is disconcerting. However, of the 29 students who validated GED preparation, all have been tested and certified. This 100% success rate is extremely reinforcing.

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[7] U.S. Department of Labor Manpower Administration (Job Corps), November, 1969.

References

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Appendix A
LAP Objectives

Curriculum Area 11 - Mathematics Skills

Curriculum Area 11, behavioral objectives, are available through Research for Better Schools, Philadelphia, Pennsylvania.

Curriculum Area 15 - Communication Skills

M-P File Code	Title	Objective	Bloom Code
15.03.01.01	Recognizing Root Words	Identify a root word from a given selection of words.	1.21
15.03.02.01	Learning to Form Compound Words	Describe and identify compound words from a list of words.	2.10 1.23
15.03.03.01	Understanding Compound Word Forms	Given groups of words, combine two root words of different meaning to form a third word. Identify compound words within sentences.	3.00 1.21
15.03.04.01	Recognizing Nouns	Recognize and define nouns in their various forms.	1.11
15.03.05.01	Alphabetizing	Given groups of letters, recognize those groups which are arranged in alphabetical order. Be able to arrange groups of letters in alphabetical order and be able to arrange words in alphabetical order to the third letter construction.	1.23
15.04.01.01	Forming Plural Words	Form the plural of nouns by adding "s" and "es" to singular forms. Given a list of words, identify those with correctly formed plurals using "s" and "es".	1.21
15.04.02.01	Selecting Synonyms	The student will define synonyms and select a synonym for a given word from a group of words and identify the given reason for knowing synonyms.	1.11 1.12

15.04.02.02	Selecting Antonyms	Define an antonym given a list of words, and select an antonym for a given word. Identify reasons for learning about antonyms.	1.11 1.12
15.04.02.03	Selecting Homonyms	Define a homonym and select a homonym for a given sentence, identify homonyms used.	1.11 1.12
15.04.03.01	Reading for Information	Given sentences and paragraphs to read, identify two basic types of writing as being either informative or entertaining.	4.30
15.04.03.02	Learning the Function of Descriptive Words	From a list of definitions, choose the meaning of a given descriptive words, and integrate their meaning for more comprehension. Read a given paragraph, then answer questions about the meaning of words in the paragraph.	1.11 2.20
15.04.03.03	Identifying Topic Sentences	Given alternative definitions, choose the proper definition of a topic sentence. Identify topic sentences in a given paragraph.	1.11 3.00
15.04.03.04	Formulating the Main Idea	Given a paragraph and alternate statements about the main idea, choose the correct statement.	3.00
15.04.04.01	Identify and Define Complete Sentences	Given examples from which to choose, identify the example containing complete sentence structure.	1.24
15.04.05.01	Alphabetizing Names and Titles	Alphabetize names and titles to the third position. Given names and titles, identify the group which is in alphabetical order.	1.23
15.05.01.01	Adding Word Endings	Given a list of root words with suffixes added, choose the alternative which is spelled correctly. From a list of rules choose the one which identifies the correct rule for spelling root word(s) with suffixes added.	1.12 1.31

15.05.02.01	Identifying Word Meanings	Identify word meanings from context.	2.20
15.05.03.01	Using the Main Idea for Recall	Use the main idea as an aid to reading for recall. Given a paragraph to read, choose the main idea from a list of alternatives.	2.20 3.00
15.05.03.02	Identifying Relevant Facts	Identify relevant fact as opposed to opinion as an aid to identifying and formulating main ideas.	4.10
15.05.03.03	Drawing Conclusions	Choose the most logical conclusion to a stated story, paragraph, or sentence from a set of alternatives.	4.20
15.05.04.01	Learning to Use End Punctuation	Given the characteristics of a type of sentence, choose the correct terminal punctuation and identify examples of properly used terminal punctuation.	1.24
15.05.05.01	Learning to Use a Dictionary	Use a dictionary in order to properly spell a word, pronounce a word and define a word.	3.00
15.06.01.01	Prefixes I	Identify root words and their characteristics. Identify the meaning of certain prefixes, and join them with root words to form new words. Define and spell the new words according to the rules given.	1.11 1.21
15.06.01.02	Prefixes II	Join prefixes with root words to form a new word. Choose the correct definition and spelling of the new word from a list of alternatives.	1.21 1.11
15.06.01.03	Suffixes	Identify the definition of the suffixes discussed in the LAP. Join suffixes to root words to form new words. Define and spell the new words according to the rules given.	1.11
15.06.02.01	Writing Definitions for Root Words.	Define root words with prefixes and suffixes added.	1.11

15.06.03.01	Learning to Read for Recall	Read paragraphs and formulate questions about them which aid recall.	5.20
15.06.03.02	Reading to Answer Questions	Read a paragraph in order to answer stated questions.	4.10
15.06.03.03	Reading to Answer Indirect Questions	Read a paragraph in order to answer indirect questions.	4.20
15.06.03.04	Fact and Opinion Statements	Determine whether an author's intention in writing a passage is to give facts or state an opinion.	4.20
15.06.04.01	Learning to Use Capital Letters	Identify properly capitalized words in sentences.	1.24
15.06.05.01	Learning the Various Parts of Books	Identify and state the functions of the various parts of a book.	1.12
15.07.01.01	Forming Contractions	Identify properly formed contractions.	1.24
15.07.01.02	Forming the Possessive	Choose the correct definition of the types of possessive nouns. Identify examples of the correct use of the apostrophe in forming possessives.	1.11 1.24
15.07.02.01	Separating Words Into Syllables	Recognize the number of syllables in a given word.	1.23
15.07.02.02	Context Clues I	Given a sentence to complete, select a word which best fits the context of the sentence.	4.10
15.07.02.03	Context Clues II	Properly define a given word through context.	2.20
15.07.03.01	Recognizing and Defining Similes, Metaphors, and Personification	Identify the various figures of speech from given examples.	1.11
15.07.03.02	Reading for Sequence	Arrange given jumbled passages into a logical meaningful sequence.	4.20

15.07.03.03	Reading Technical Materials	Given alternatives, choose the statement which most accurately indicates the meaning of a paragraph on a technical subject.	2.20
15.07.04.01	Learning Proper Subject-Verb Agreement	Identify examples of proper subject-verb agreement in given sentences.	1.31
15.07.05.01	Using the Encyclopedia	Use the encyclopedia effectively.	3.00
15.08.01.01	Syllabizing Words	Identify words that are properly syllabified.	1.31
15.08.02.01	Plurals and Entry Words	Properly form the plurals of nouns in relation to entry words.	1.24
15.08.03.01	Reading for Detail	Read a paragraph and predict the most probable outcome from observation of detail.	2.30
15.08.03.02	Listing Words Into Proper Groups	List words and groups of words under proper headings.	1.23
15.08.03.03	Following Directions	Follow written directions and identify correct responses to those directives.	2.20
15.08.04.01	Placing Adjectives	Identify the proper form of the adjective in given sentences.	1.24
15.08.04.02	Placing Adverbs	Identify the proper form of the adverb in given sentences.	1.24
15.08.04.03	Placing Pronouns	Identify the proper use of pronouns in given sentences.	1.24
15.08.05.01	Classifying Books I	Identify the correct classification of books according to the Dewey Decimal System.	1.23
15.08.05.02	Classifying Books II	Identify the correct location of various entries classified according to the Dewey Decimal System.	1.23
15.09.01.01	Properly Forming Possessives of Singular Nouns	Given a sentence using a noun in the possessive case, choose the proper form of the noun from the alternatives listed.	1.24

15.09.01.02	Properly Forming Contractions	Identify correctly formed contractions from a list of alternatives.	1.24
15.09.01.03	Properly Forming Noun Plurals	Identify correctly formed plurals of regular and irregular nouns.	1.24
15.09.02.01	Joining Prefixes with Root Words	Identify correct meanings made by joining prefixes to root words.	1.11
15.09.02.02	Joining Suffixes with Root Words	Identify correct meanings made by joining suffixes to root words.	1.11
15.09.03.01	Identifying Proper and Improper Capitalization	Identify examples of proper and improper capitalization.	1.24
15.09.04.01	Nouns, Pronouns and Verbs	Identify the various classifications of nouns, pronouns, and verbs.	1.11
15.09.04.02	Adjectives and Adverbs	Identify correctly used adjectives and adverbs.	1.24
15.09.04.03	Prepositions, Conjunctions and Interjections	Identify correctly used prepositions, conjunctions, and interjections.	1.24
15.09.05.01	Defining and Identifying Regular and Irregular Verbs	Define and identify examples of the correct use of regular and irregular verbs.	1.24
15.09.05.02	Subject-Verb Agreement	Define and identify examples of correct and incorrect subject verb agreement.	1.24
15.10.01.01	Adding Prefixes and Suffixes to Root Words	Add prefixes and suffixes to root words and identify and define the resultant word.	1.21
15.10.02.01	Using Context Clues for Word	Identify context clues in terms of restatement and examples.	2.20
15.10.02.02	Context Clues Through Inference	Identify the correct meaning of a word through inference.	2.20
15.10.03.01	Using Terminal Punctuation	Identify examples with properly used terminal punctuation.	1.24

15.10.03.02	Using Quotation Marks	Identify examples with properly used quotation marks.	1.24
15.10.04.01	Using Adjectives	Identify properly used adjectives from a list of alternatives, chose examples of the different types of adjectives.	1.24 1.11
15.10.04.02	Using Adverbs	From a list of alternatives, identify correct definition of the various kinds of adverbs, and recognize characteristics of adverbs.	1.24 1.11
15.10.05.01	Properly Using Confusing Word Pairs	Identify confusing word pairs properly used in a sentence.	1.21
15.11.01.01	Spelling "ie" "ei" Words	Identify the correct spelling of "ie" and "ei" words.	1.12
15.11.02.01	Interpreting Sentences	Identify the essential components of a sentence and identify the proper interpretation of a given sentence.	1.12 2.20
15.11.02.02	Reading Paragraphs for the Main Idea	Identify the main components of a paragraph and identify the main idea of a given paragraph using the criteria.	1.12 2.20
15.11.03.01	Properly Using Commas - I	Identify proper comma usage in given sentence structures.	1.24
15.11.03.02	Properly Using Commas - II	Identify proper comma usage in given sentence structures.	1.24
15.11.04.01	Learning to Identify Objects	Identify direct and indirect objects in given sentence structures.	1.12
15.11.05.01	Properly Using Pronouns	Identify properly used pronouns in a given sentence structure.	1.24
15.11.05.02	Properly Using Prepositions	Identify properly used prepositions in a given sentence structure.	1.24
15.12.01.01	Learning to Spell Difficult Words I	Identify correct spelling of difficult words.	1.11
15.12.01.02	Learning to Sepll Difficult Words II	Identify the correct spelling of difficult words.	1.11

15.12.02.01	Learning to Read for Facts, Opinions, and Issues	Identify examples and definitions of facts, opinions, and issues.	1.11 4.10
15.12.02.02	Learning to Read for Inference	Define inference and identify examples of its use.	1.11
15.12.03.01	Using Semicolons Dashes, and Colons	Identify properly used semicolons, dashes and colons from given examples.	
15.12.04.01	Developing Sentences	From a list of alternatives identify the statement using proper sentence structure.	1.24
15.12.05.01	Writing Concise Sentences	From a list of examples distinguish statements using faulty sentence structure from those using concise sentence structure.	1.24
15.13.01.01	Learning to Correctly Spell Words	Identify the correct spelling of a word from a given list of words.	1.11
15.13.02.01	Learning Differences Between Formal and Colloquial Patterns	Identify formal and/or colloquial language patterns from a group of patterns displaying both formal and colloquial structures.	1.24
15.12.03.01	Learning to Use Troublesome	Identify examples of properly used punctuation from a group of sentences both properly and improperly punctuated.	1.24
15.13.04.01	Learning How to Lay Out a Paper	Identify and define proper rules pertaining to manuscript.	1.24
15.13.05.01	Learning to Fit Paragraphs Into Compositions	Identify the elements necessary to properly construct a paragraph.	1.24
15.13.05.02	Learning to Write a Composition	Identify the elements and characteristics necessary to a properly constructed composition.	1.24

Appendix B
Bloom's Taxonomy of Behavioral Objectives[8]
(Cognitive Domain)

Knowledge

1.00 Knowledge. Recall of information
1.10 Knowledge of specifics. Emphasis is on symbols with concrete referents.
    1.11 Knowledge of terminology
    1.12 Knowledge of specific facts

1.20 Knowledge of ways and means of dealing with specifics. Includes methods of inquiry, chronological sequences, standards of judgment, patterns of organization within a field.
    1.21 Knowledge of conventions: accepted usage, correct style, etc.
    1.22 Knowledge of trends and sequences
    1.23 Knowledge of classifications and categories
    1.24 Knowledge of criteria
    1.25 Knowledge of methodology for investigating particular problems

1.30 Knowledge of the universals and abstractions in a field. Patterns and schemes by which phenomena and ideas are organized.
    1.31 Knowledge of principles and generalizations
    1.32 Knowledge of theories and structures (as a connected body of principles, generalizations, and interrelations)

Intellectual Skills and Abilities

2.00 Comprehension. Understanding of material being communicated, without necessarily relating it to other material.
    2.10 Translation. From one set of symbols to another
    2.20 Interpretation. Summarization or explanation of a communication
    2.30 Extrapolation. Extension of trends beyond the given data

3.00 Application. The use of abstractions in particular, concrete situations.

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[8] Adapted from D.L. Krathwohl, Stating objectives appropriately for program, for curriculum, and for instructional materials development. Journal of Teacher Education, 1965, 16, 83-92; also appearing in D.E. Payne (Ed.) Curriculum Evaluation. Lexington, Mass.: D.C. Heath & Co., 1974, under the title "Stating Appropriate Educational Objectives," pp. 69-80.

4.00 Analysis. Breaking a communication into its parts so that origanization of ideas is clear.
  4.10 Analysis of elements. That is, recognizing assumptions
  4.20 Analysis of relationships. Content or mechanical factors
  4.30 Analysis of organizational principles. What holds the communication together?

5.00 Syntheses. Putting elements into a whole
  5.10 Production of a unique communication
  5.20 Production of a plan for operations
  5.30 Derivation of a set of abstract relations

6.00 Evalution. Judging the value of material for a given purpose
  6.10 Judgment in terms of internal evidence; e.g., logical consistency
  6.20 Judgments in terms of external evidence; e.g., consistency with facts developed elsewhere

Appendix C
Department of Labor Booklets Used in GED Preparation

CORRECTNESS & EFFECTIVENESS OF EXPRESSION

Department of Labor Study Booklets

Title	Booklet #
Level I	
Word Roots, Prefixes, Suffixes	1
Word Context Clues	2
Level III	
Difficult Words to Spell	94
Sentences and Their Parts	95
Adjectives and Adverbs	96
Comparative Forms	97
Spelling ie and ei Words	98
Using Negatives Correctly	99
Using Prepositions & Prepositional Phrases	100
Spelling - ance and ence Words	101
Subject and Object Pronouns	102
Possessive and Reflexive Pronouns	103
Possessive and Plural Nouns	104
Spelling Confusing Word Pairs	105
Subject and Verb Agreement	106
Past Verb Forms	107
Spelling More Difficult Words	108
Spelling Endings Added to E	109
Capitalization	110
Question Marks & Exclamation Points	111
Quotation Marks	112
Spelling Double Letter Demons	113
Colons and Dashes	114
Punctuation Series with Commas and Semicolons	115
More Confusing Work Pairs	116
Separating Sentence Parts with Punctuation	117
Other Uses for Commas and Semicolons	118
More Special Spelling Problems	119
Spelling More Endings	120
Matching Sentence Parts	121
Using the Right Sentence Connectives	122
More Ways to Make Sentences Effective	123
Last of the Confusing Word Pairs	124

SOCIAL STUDIES

Department of Labor Study booklets

Level I

Title	Booklet #
Map Reading	3
Climate	4
Studying Man and the Natural World	5
Man and His Culture	6
Reading for Implied Meanings	7
Production and Consumption	8
Forms of Government	9
Reading for Facts, Opinions and Issues	10
Basic Economic Systems	11
Representative Democracy and Political Parties	12
Reading to Draw Inferences	13
Government Separation of Powers	15

Level II

U.S. Colonization to Independence	30
U.S. Confederation to Constitutional Convention	31
Framing the U.S. Constitution	32
Founding Fathers	33
The Election Process	34
The Civil War	35
The Industrialization and Growth of the Cities	36
Immigration	37
Unions and Management	38

Level III

Free Enterprise and Government	78
Social Legislation	79
Taxes	80
Free Trade and Tariffs	81
Capitalism, Communism, Socialism	82
Nationalism vs. Internationalism	83

NATURAL SCIENCE

Department of Labor Study Booklets

Level I

Title	Booklet #
Craftsmanship and Technology	14
States of Matter: Solid, Liquid, Gas	18
Properties & Measures of Matter	19
Energy, Matter, Theory and Law	20
The Particles and Structure of Matter	21
Atomic Structure and Chemical Change	22
Chemical Compounds	23
Forms of Energy	24
Level II	
Life Functions and Cells	52
Cell Structure	53
Tissues, Organs, Systems	54
Growth and Nutrition	55
Metabolism	56
Speed, Acceleration, and Velocity	61
Force, Mass and Distance	62
Types of Motion and Rest	63
Electricity and Magnetism	64
Electrical, Magnetic, and Gravitational Fields	65
The Conservation and Conversion of Energy	66
Simple Machines and Work	67
Gas Laws	68
Principles of Heat Engines	69
Sound and Sound Waves	70
Light Waves and Particles	71
The Behavior of Light Rays	72
Atomic Structure and Valence	73
Chemical Bonding	74
The Table of Elements	75
Electrolysis	76
Osmosis	77
Level III	
Plants and Photosynthesis	84
The Human Digestive System	85
Functions of the Blood	86
Human Circulation and Respiration	87
Reproduction of a Single Cell	88
Reproduction by Male and Female Cells	89
The Human Reproductive System	90
Genetics and Heredity	91
The Nervous System	92
The Glandular System	93

INTERPRETATION OF LITERARY MATERIALS

Department of Labor Study Booklets:

Level I

Title	Booklet #
Comparisons in Literature	16

Level II

Reading for Feelings	39
Reading for Shifts in Feeling	40
Reading for Character	41
Reading for Signs of Hidden Character	42
Words that Paint Pictures	43
Devices Used in Literature	44
The Meaning of Literary Devices	45
Periods and Levels of Writing	46
Qualities of Good and Bad Writing	47
What to Look for in Narrative Writing	48
Interpreting Figurative Writing	49
Keeping Track of the Subject in Writing	50
Reading Literature for Understanding	51

MATHEMATICS

Department of Labor Study Booklets:

Level I

Title	Booklet #
Positive and Negative Numbers	17
Solving Fraction Word Problems	25
Solving Decimal Word Problems	26
Solving Percentage Word Problems	27

Level II

Title	Booklet #
Tables and Graphs	28
Line Graphs	29
Algebra	57
Powers and Roots	58
Geometry	59
Number Series	60